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RELEASE ABATEMENT MEASURE PLAN

343-349 and 351 Summer Street
Somerville, Massachusetts

MassDEP RTNs 3-33735 and 3-34098

June 16, 2017

Prepared for:

351 Summer LLC
c/o The Maggiore Companies
13 Wheeling Avenue
Woburn, Massachusetts 01801

Prepared by:

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2 Merchant Street, Suite 2
Sharon, Massachusetts 02067

A Full Service Environmental Consulting
And Contracting Firm

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1.0 INTRODUCTION

EnviroTrac Ltd. (EnviroTrac) prepared this Release Abatement Measure (RAM) Plan on behalf of 351 Summer LLC (351 Summer) for the commercial properties located at 343-349 and 351 Summer Street in Somerville, Massachusetts. 351 Summer LLC acquired the 343-349 Summer Street parcel from The Dakota Group on February 6, 2017 and acquired development rights for 351 Summer Street from the Dilboy VFW Post #529 for the 351 Summer Street parcel on February 6, 2017.

A RAM Plan is required to manage potentially impacted soil related to Release Tracking Numbers (RTNs) 3-33735 and 3-34098 during development-related construction. This RAM was prepared pursuant to provisions of the Massachusetts Contingency Plan (MCP) set forth at 310 CMR 40.0444 and Massachusetts Department of Environmental Protection (MassDEP) Policy #WSC-00-425.

2.0 PROPERTY DESCRIPTION

The Property is an approximately 0.93 acre plot of land comprised of two (2) parcels of land identified by the City of Somerville Assessor's office as Map #25, Block D, Lots #33 (343-349 Summer Street) and #36 (351 Summer Street) in an area zoned Central Business District CBD and Residence A (RA), and is surrounded by properties zoned Residence B (RB) and Neighborhood Business (NB). The latitude and longitude of the Property are 42.39369° North and 71.11910° West, respectively. The location of the Property is depicted on **Figure 1**. A Site Plan depicting the approximate location of the release and other pertinent features is provided as **Figure 2**.

The Property consists of a vacant parcel of land located in a flat, low-lying area surrounded by residences and commercial properties. The Massachusetts Bay Transportation Authority (MBTA) Red Line runs directly below the Site within a bedrock tunnel approximately 80 feet bgs. The parcel identified as 343-349 Summer Street is currently undeveloped but contains an air vent for the MBTA Red Line which runs beneath the southwestern portion of the parcels. The parcel at 351 Summer Street is currently used as a paved parking lot for the adjacent George Dilboy VFW Post #529.

Historically, the 351 Summer Street parcel was used as a gasoline filling station prior to the parcel being vacated to facilitate the construction of the MBTA Red Line beneath the property in the 1980s. The 343-349 Summer Street parcels had been the location of residential dwellings and associated parking. Two (2) 60-gallon petroleum underground storage tanks (USTs) were formerly located at the Facility and were removed in August 2016.

The Property is bordered by the following:

North:	Residential properties
South:	Summer Street, beyond which are residential properties.
East:	Residential and commercial properties.
West:	Veterans of Foreign Wars building/parking lot and commercial properties.

2.1 Disposal Site Boundary Descriptions

A Disposal Site is defined as the portion of the Property where oil and hazardous materials have come to be located as a result of a release. There are two Disposal Sites on the Property.

RTN 3-33735

This RTN was issued when a sudden release of petroleum occurred on August 8, 2016 from a UST during test pitting activities on the 343-349 Summer Street parcel. A two-hour release notification was provided to MassDEP and Immediate Response Actions, including removal of two (2) 60-gallon USTs and approximately 5 tons of soil, were completed. A preliminary Disposal Site Boundary for this RTN is depicted on **Figure 2** and encompasses an area measuring approximately 8 feet by 8 feet and extending vertically from approximately 4.5 to 8.5 feet below grade.

RTN 3-34098

This RTN was issued due to the discovery of lead and benzo(a)pyrene at concentrations exceeding MCP RCS-1 reportable concentrations during due diligence site assessment activities on the 351 Summer Street parcel. As a result of subsequent soil sampling and laboratory analyses to support soil disposal pre-characterization, it has been documented that lead is present in soil at multiple locations on both the 343-349 and 351 Summer Street parcels. In addition, a number of polycyclic aromatic hydrocarbons (PAH), including benzo(a)pyrene, are also present in soil samples collected throughout the Property. Therefore, the preliminary Disposal Site Boundary for this RTN encompasses the entirety of both the 343-349 and 351 Summer Street parcels from ground surface to a depth of approximately 15 feet bgs and is depicted on **Figure 2**.

2.2 Sensitive Receptors

Information regarding MCP Priority Resources as depicted in **Figure 3** and as obtained from the Massachusetts Office of Geographic Information shows no sensitive receptors located within 500 feet of the Disposal Site.

Protected Open Spaces are located to the north, northeast, northwest, and southwest of the Disposal Site, the nearest of which is approximately 800 feet north.

Two surface railroads are located within one-half mile of the Disposal Site. The MBTA Red Line is located in a bedrock tunnel approximately 80 feet beneath the Site.

The nearest surface water body is Fresh Pond located approximately 1.3 miles southwest of the Disposal Site.

No institutions are located within one-half mile of the Disposal Site.

2.3 Groundwater and Soil Classification

2.3.1 Groundwater Classification

The Disposal Site is not located within a Current or Potential Drinking Water Source Area; therefore, groundwater at the Disposal Site is not classified as GW-1. Occupied buildings are

currently located within 30 feet of the Disposal Site and future use of the Disposal Site will include occupied buildings. Depth to groundwater is less than 15 feet; therefore, groundwater is classified as GW-2. Groundwater at the Disposal Site and surrounding areas is a potential source of discharge to surface water bodies and is therefore classified as GW-3. In summary, the groundwater classifications applicable to the Disposal Site are GW-2 and GW-3.

2.3.2 Soil Classification

Three categories of soil are defined in the MCP at 310 CMR 40.0933 based on accessibility of soil to potential receptors and frequency and intensity of use within the Disposal Site. Based on current use and activities, the primary human receptors are adult and children trespassers with a low frequency, low intensity. Based on foreseeable use of the Site, adult and child visitors may be present at the Disposal Site with a high frequency of use at a high intensity. Construction, utility, and environmental workers may also be present at the Disposal Site with a low frequency of use at a high intensity.

The accessibility of soil is dependent on the depth of soil and whether it underlies pavement, a building, or other permanent structure. Based on the MassDEP soil category selection matrix found at 310 CMR 40.0933(9), the S-1 category applies to the Disposal Site.

In summary, based on the foregoing and the current and foreseeable Disposal Site activities and use, soil is classified as S-1 /GW-2 and S-1/GW-3.

2.4 Previous Environmental Investigations

Upon review of information available through MassDEP's Waste Site/Reportable Releases Look Up, EnviroTrac identified no RTNs issued for releases at 343 Summer Street in Somerville, MA other than RTN 3-33735 and 3-34098.

3.0 DESCRIPTION OF RELEASE [310 CMR 40.0444(1)(b)]

3.1 Description of Release

RTN 3-33735

In accordance with the requirements of the MCP, as set for at 310 CMR 40.0311 (3), a 2-hour reporting requirement was triggered when approximately 30 gallons of oil was released from a UST during removal.

On August 8, 2016, EnviroTrac monitored the completion of test pits excavated by Koster and Sons Construction, Inc. The test pits were completed to investigate the potential existence of an UST on the 343-349 Summer Street parcel. A historical (1934-1950) Sanborn Insurance Map showed the existence of a "gas tank" on the property and there was no available documentation that the UST had been removed from the property.

A series of trenches, approximately 5 feet wide and 7-8 feet deep were excavated using a backhoe. During the test pit activities, a UST was encountered and damaged by the backhoe. The top of the UST was approximately 2.5 feet bgs. The UST was 30 inches in diameter and 24 inches in length with a volume capacity of approximately 60 gallons. As the result of the UST

containing oily liquid, approximately 20-30 gallons of liquid were released to the adjacent soil when the UST was damaged.

In response to the release, both the Massachusetts Department of Environmental Protection (MassDEP) and the Somerville Fire Department were notified. MassDEP assigned Release Tracking Number (RTN) 3-33735 to the Site. In accordance with a MassDEP-approved Immediate Response Action (IRA), approximately 5 tons of oil-impacted soil were excavated by Strategic Environmental Services, LLC (SES) on August 12, 2016, from the vicinity of the damaged UST. The impacted soil was stockpiled on-site, characterized for disposal and transported off-site for disposal.

On August 12, 2016, during the excavation of impacted soil associated with the UST encountered on August 8, 2016, two small-diameter buried pipes were observed exiting the excavation. Further excavation in the area of the piping identified a second small UST (Tank #2) approximately 6 feet west of the first UST (Tank #1). Tank #2 was confirmed to be approximately the same size as Tank #1 with no evidence of releases or leaks from the UST observed. The contents of both tanks were removed and placed in two (2) 55-gallon drums for off-site disposal. After cleaning, the tanks were removed from the excavation and transported to the James G. Grant Co. tank yard for disposal.

On September 23, 2016, the oil-impacted soil excavated on August 12, 2016 by SES, was placed into a roll off container and transported under a Bill of Lading to Aggregate Recycling Corporation in Eliot, Maine for disposal. Based on the provided documentation, approximately 5 tons of soil were disposed.

On August 12, 2016, eight (8) soil samples, representative of the extent of the excavation in the vicinity of the two USTs, were obtained by EnviroTrac. The soil samples, identified as S-1 through S-8, were placed into clean, appropriately preserved glassware and transported under a chain of custody to SGS Accutest Laboratories (SGS) of Marlborough, Massachusetts. Each soil sample was analyzed for extractable petroleum hydrocarbons (EPH) and volatile petroleum hydrocarbons (VPH). A composite sample, representative of the stockpiled oil-impacted soil, was also obtained and analyzed for soil disposal parameters. A sample of the contents of Tank #1 was also submitted to SGS for forensic fingerprint analysis.

On August 17, 2016, groundwater samples were collected from 10 monitoring wells installed on the Property. Select samples were analyzed for volatile organic compounds (VOC) using EPA Method 8260, EPH and VPH using the MassDEP Methods, and the MCP 14 metals. The groundwater samples were collected using a modified low-flow method into laboratory provided, pre-cleaned and pre-preserved glassware, stored on ice and transported to SGS laboratory in Marlborough, Massachusetts for analyses.

The Notice of Responsibility (NOR) for RTN 3-33735 was issued to Dakota Partners LLC, the former owners of the 343-349 Summer Street parcel. 351 Summer LLC closed on the purchase of the Property on February 7, 2017 for the purposes of redevelopment and will continue Response Actions under the MCP.

An Immediate Response Action (IRA) Plan and Completion Report was submitted to MassDEP on March 16, 2017. The report concluded the sudden release of oil which gave rise to the need to conduct an IRA has been addressed and remediated to the extent necessary to stabilize conditions. It also concluded further MCP Preliminary or Comprehensive Response Actions are

required to remediate the presence of EPH target analytes present in soil at concentrations exceeding the MCP reportable concentrations.

On March 30, 2017, groundwater samples were collected from 10 monitoring wells installed on the Property. Select samples were analyzed for EPH using the MassDEP Method and the MCP 14 metals. The groundwater samples were collected using a modified low-flow method into laboratory provided, pre-cleaned and pre-preserved glassware, stored on ice and transported to SGS laboratory in Marlborough, Massachusetts for analyses. No concentrations of COCs detected in groundwater exceeded applicable MCP Method 1 GW-2 or GW-3 standards at any monitoring well location. The monitoring well locations are depicted on **Figure 2**. Groundwater gauging data and analytical data are summarized in **Tables 1 and 2**, respectively.

RTN 3-34098

During due diligence site assessment activities conducted in August 2016, a total of eight (8) soil borings were installed across the Property. Laboratory analyses of soil samples collected during the boring installation revealed the presence of lead and benzo(a)pyrene at concentrations exceeding the MCP RCS-1 reportable concentrations.

351 Summer LLC became the affignee of an agreement regarding 351 Summer Street parcel on February 6, 2017 Subsequently, 351 Summer LLC, as operator of the Property, reported a 120-day condition to MassDEP on February 7, 2017.

4.0 RELEASE ABATEMENT MEASURE PLAN [310 CMR 40.0444(1)(c)]

4.1 Person Conducting the RAM

The RAM will be conducted by the owner/operator and Responsible Party:

351 Summer LLC
c/o The Maggiore Companies
13 Wheeling Avenue
Woburn, Massachusetts 01801
Contact: Matthew P. Maggiore, Manager
Phone: (781) 935-6100

Oversight of RAM implementation will be performed by the Licensed Site Professional (LSP) of Record:

Robert H. Bird, Principal Hydrogeologist
LSP No. 8972
EnviroTrac Ltd.
2 Merchant Street, Suite 2
Sharon, Massachusetts 02067
Phone: (781) 793-0074

4.2 Objectives

The objective of the RAM is to manage potentially impacted soil during site work and development of the Property. A three-story condominium structure with a basement parking garage and a two-

story slab-on-grade structure will be constructed on the 351 Summer Street parcel. Paved parking and a below-grade storm water infiltration structure will be constructed on the 343-349 Summer Street parcel. Planned site work and construction activities will generate approximately 8,000 cubic yards of soil for export. Approximately 4,000 cubic yards of the total exceeds RCS-1 reportable concentrations for lead and PAHs and will likely be disposed at the Aggregate Recycling Corporation (ARC) facility in Eliot, Maine or at a MA landfill in accordance with MassDEP Policy # COMM-97-001. The remaining 4,000 cubic yards will likely be reused at an appropriate off-site location in accordance with 310 CMR 40.0032(3) and the "Similar Soils Provision Guidance" (WSC#-13-500). Final soil disposal locations will be subject to facility acceptance criteria and capacity limitations.

4.3 RAM Activities

4.3.1 Soil Pre-characterization

Prior to initiation of the RAM, a soil pre-characterization program consisting of a total of 27 soil borings was conducted at the Property on March 28, 2017. A total of 19 composite soil samples were collected and analyzed for general landfill disposal parameters to pre-characterize soil for on-site reuse, off-site transport and reuse, or off-site disposal. Based on visual observations of coal and coal ash in the field, six (6) of the soil samples were submitted to MicroVision Laboratories in Chelmsford, Massachusetts for coal, coal ash, and wood ash analysis. Soil analytical data are summarized in **Tables 3 through 5**. Laboratory reports are included as **Appendix F**.

On April 19, 2017, a total of 10 surficial samples were collected from surface grade to 18 inches bgs on the 343-349 Summer Street parcel. The soil samples were composited into two (2) samples and analyzed for general landfill disposal parameters. Surficial soil analytical data are summarized in **Table 6**.

4.3.2 On-site Reuse, Transport and Reuse, or Off-site Soil Disposal

Based on laboratory results, excavated soils which exhibit concentrations less than MCP RCS-1 Reportable Concentrations and no other signs of contamination may be re-used on or off-site and will be managed in accordance with 310 CMR 40.0030 and the Similar Soils Provision Guidance (Policy #WSC-13-500). For soil not suitable for on-site reuse, LSP packages for disposal facility approval and associated Bill of Lading (BOL) or Material Shipping Record (MSR) will be prepared. Following the receipt of disposal facility approval, soil will be transported off-site. The "anti-degradation" provisions contained in 310 CMR 40.0032(3), which prohibit the transport and disposal/reuse of contaminated soils at locations with significantly lower concentrations of oil and hazardous material will be taken into consideration for potential transport and reuse of soils.

4.3.3 Soil Stockpiling

Stockpiling at the Facility may be necessary for soil that requires additional or further characterization, such as additional sampling for disposal facility requirements, exhibit elevated photoionization detector (PID) readings, or obvious visual and/or olfactory evidence of contamination. Temporary stockpiling may also be necessary while awaiting transportation for off-site disposal or for soil that has been identified to be suitable for on-site reuse. Soil will be temporarily stockpiled on and under polyethylene sheeting and surrounded by wattles. Weights will applied to the polyethylene sheeting to prevent wind damage. Stockpile locations will be subject to change based on available space.

4.3.4 Toxicity Characteristic Leaching Protocol (TCLP) Evaluation

14 soil samples collected on March 28, 2017 were submitted for TCLP lead analysis based on detections of total lead greater than 100 mg/kg. None of the samples exceeded the Resource Conservation and Recovery Act (RCRA) hazardous waste criteria of 5.0 mg/l in the TCLP leachate.

4.3.5 Ground Penetrating Radar (GPR) Survey

On April 28, 2017, a Geophysical Survey was completed at the Disposal Site to scan for the presence of unknown steel underground storage tanks. Survey grids were laid out across accessible portions of the site. Geophysical data were collected in all accessible portions of the survey grids using ground penetrating radar (GPR) and electromagnetic (EM) methods. A copy of the Geophysical Survey Report is included as **Appendix E**.

Interpretation of the GPR/EM results identified four (4) potential locations that may be steel UST, as well as numerous locations of buried debris and areas of soil disturbance. The four (4) potential UST locations will be explored by test pitting prior to the initiation of RAM excavation activities on the 351 Summer Street parcel.

4.3.6 Underground Storage Tank (UST) Removal

If the test pitting program described above results in the identification of one or more UST, EnviroTrac will oversee the pumping, cleaning, removal and disposal of all USTs found in accordance with local, state and federal requirements.

4.4 Implementation Schedule

RAM activities are scheduled to begin during June 19, 2017. RAM Status Reports will be submitted to MassDEP within 120-days of submitting the initial RAM Plan, and every 6 months thereafter, until a RAM Completion Report is submitted to the Department (310 CMR 40.0445).

A RAM Completion Report will be submitted to the Department no later than 60 days following completion of RAM activities (310 CMR 40.0446).

5.0 SOIL MANAGEMENT

5.1 Remediation Waste Management [310 CMR 40.0444(1)(d)]

RAM activities will involve the management of contaminated soil (i.e., Remediation Waste) prior to off-site removal for reuse, disposal, recycling, or treatment. Remediation Waste will be managed in accordance with 310 CMR 40.0030 and the Soil Management Plan (SMP) provided as **Appendix A**.

Excavated materials will be monitored during excavation for visual and olfactory evidence of contamination (such as discoloration, texture, and odor), as well as total organic vapor using a PID. Additional analytical testing may also be performed for supplemental characterization as required by receiving facilities.

Excavated soil that is deemed Remediation Waste is anticipated to be directly loaded for transport to an approved disposal facility under a BOL; however, if temporary stockpiling is necessary, soil will be staged on and under polyethylene sheeting to control dust and potential odors and will be secured to restrict access by the public.

No Remedial Additives will be used during the RAM.

5.2 Similar Soils Management

RAM activities may include the management of soils which exhibit concentrations less than MCP RCS-1 Reportable Concentrations. This soil is anticipated to be either reused on-site or transported for reuse off-site, if a suitable receiving location can be identified. If the soil is determined to be unsuitable for construction and/or redevelopment purposes, it will be transported off-site for disposal to an approved facility under MSRs. These soils will be managed as outlined in this RAM Plan and in accordance with anti-degradation provisions outlined at 310 CMR 40.0032(3) and the Similar Soils Provision Guidance (WSC#-13-500).

6.0 PROPOSED ENVIRONMENTAL MONITORING PLAN [310 CMR 40.0444(1)(e)]

During RAM activities, monitoring conditions at the Property with respect to worker health and safety will be conducted in accordance with the Health and Safety (H&S) Plan (**Appendix B**). All workers will be notified of the requirements of the H&S Plan and protocols for handling potentially impacted soils. The H&S Plan will be available at the Property throughout the duration of the construction.

During excavation activities, soil will be screened for total organic vapors with a PID using MassDEP Jar Headspace Method. Soil will be re-used, segregated, stock piled, and/or removed from the Facility based on PID readings and visual and olfactory evidence.

The Contractor will employ dust control measures to limit the creation of airborne dust. Standard dust control, such as wetting the exposed ground surface, will be employed where heavy equipment will be traveling and where dust is generated. Perimeter dust monitoring as described in the Dust Monitoring Plan (DMP) (**Appendix C**) will also be conducted.

7.0 PERMITS [310 CMR 40.0444(1)(f)]

7.1 Federal Permits

No federal permits will be required for the implementation of the RAM.

7.2 State and Local Permits

The Site Contractor will obtain DigSafe utility clearances and any other state or local permits that will be required for the implementation of the RAM.

8.0 APPROVAL OF LICENSED SITE PROFESSIONAL [310 CMR 40.0444(1)(g)]

The required Licensed Site Professional seal and signature are incorporated in the RAM Transmittal Form (BWSC106) to which this RAM Plan is attached.

9.0 EXCAVATION CERTIFICATION [310 CMR 40.0444(1)(h)]

351 Summer LLC hereby certifies that, based upon information and opinions provided by the LSP, 351 Summer LLC has sufficient financial resources to manage excavated materials in the manner and time frames specified at 310 CMR 40.0030.

10.0 OTHER INFORMATION [310 CMR 40.0444(1)(i)]

Since this initial RAM Plan was prepared for submittal to MassDEP, MassDEP has not reviewed the RAM Plan and therefore has not identified any other information determined to be necessary to complete the RAM.

11.0 PROPOSED STRUCTURE FOOTPRINT EVALUATION

Requirements for constructing structures in contaminated areas are specified in MassDEP Policy #WSC-00-425 (dated January 2000) and have been incorporated into the MCP at 310 CMR 40.0442(3). Each applicable requirement from that portion of the MCP are discussed in the following sections.

11.1 Site Assessment [310 CMR 40.0442(3)(a)]

Site assessment to evaluate and document current environmental conditions (including the area within and adjacent to the footprint of the proposed structure) was conducted in 2016 and 2017. Investigations were conducted in a manner that achieves the substantive technical standards set forth in 310 CMR 40.0800 and 40.0900.

Site assessment activities included document and literature review, subsurface investigations, and soil and groundwater sampling. Based on investigations and analytical data to date, soil COCs include petroleum hydrocarbons, PAHs, and metals. No concentrations of COCs detected in groundwater exceeded applicable RCs or MCP Method 1 GW-2 or GW-3 standards at any monitoring well location in 2016 or 2017.

11.2 Risk Characterization [310 CMR 40.0442(3)(b)]

A focused risk characterization (FRC) was conducted for the area within and adjacent to the footprint of the proposed structure to evaluate the risk of receptor exposure to soil COC during construction and to surrounding populations and future occupants of the proposed building. Risk of groundwater COC exposure was not evaluated as concentrations of COCs do not exceed applicable RCs and MCP Method 1 standards. The FRC is provided as **Appendix D**.

The human health FRC demonstrated that concentrations of COCs in soil did not pose a significant risk of harm to human health for construction workers engaged in activities related to

the redevelopment of the Facility or to potential future residents and potential future trespassers; therefore, a condition of No Significant Risk (NSR) exists.

11.3 Feasibility of Achieving or Approaching Background [310 CMR 40.0442(3)(c)]

As required by 310 CMR 40.0442(3)(c), an evaluation of the feasibility of reducing the concentrations of OHM at the Site to levels that achieve or approach background was conducted. This evaluation was conducted in accordance with MassDEP Policy #WSC-04-160 - *Conducting Feasibility Evaluations Under the MCP*. This policy presents the MassDEP position related to conditions of categorical feasibility to achieve background conditions, conditions of categorical infeasibility to achieve background conditions and conditions which meet the definition of approaching background.

EnviroTrac reviewed Disposal Site conditions, Response Actions completed, conditions of categorical feasibility and infeasibility, and conditions approaching Background as outlined in MassDEP Policy #WSC-04-160. As stated in the FRC (**Appendix D**), planned remedial activities conducted under this RAM will be to excavate impacted areas and dispose of impacted soil. EnviroTrac believes that the removal and disposal of impacted soil during redevelopment activities will achieve a condition of No Significant Risk for all future users and meet all other requirements of a Permanent Solution for the Disposal Site. Post-excavation soil sampling will be conducted to demonstrate the achievement of these conditions.

11.4 Exposure Point Concentrations (EPCs) that Exceed Soil Upper Concentration Limits (UCLs) [310 CMR 40.0442(3)(d)]

As shown in **Table 10** of the FRC, no soil EPCs exceed soil UCLs as specified in 310 CMR 40.0996(6); therefore, the requirement to reduce concentrations to levels at or below UCLs to the extent feasible is not required.

11.5 Elimination or Control of Any Source of OHM Contamination [310 CMR 40.0442(3)(e)]

The presence of COCs was characterized through subsurface investigations completed to date. No ongoing sources of COCs were identified; therefore, all unpermitted releases and sources of COCs to the environment are eliminated.

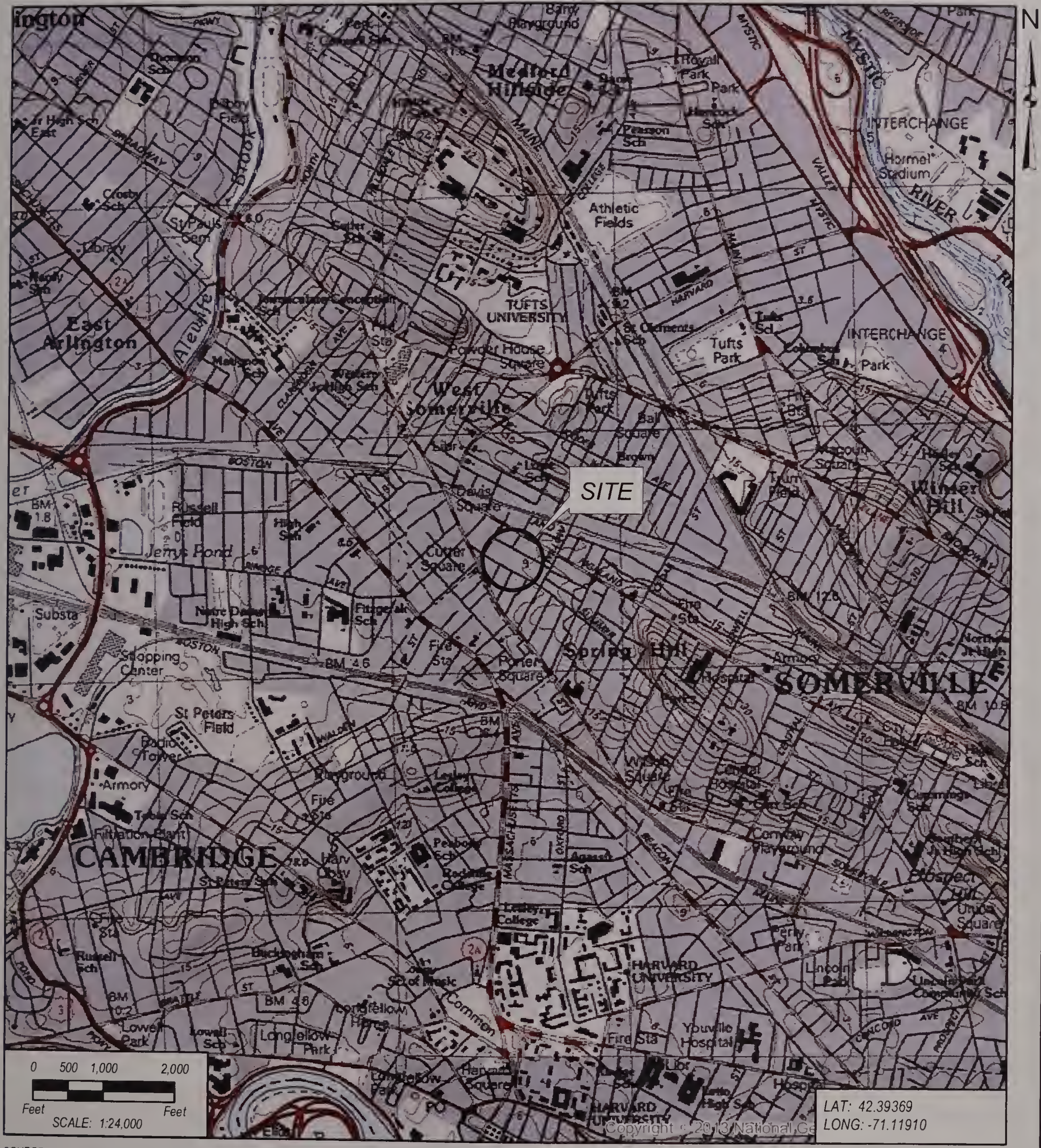
11.6 Management of Non-aqueous Phase Liquid (NAPL) [310 CMR 40.0442(3)(f)]

Based on available information and subsurface investigations completed to date, NAPL has not been encountered at the Disposal Site since initiation of Response Actions; therefore NAPL is not present at the Disposal Site and management of NAPL is not required.

11.7 Other Remedial Actions Deemed Necessary to Ensure Eventual Achievement of a Level of NSR for the Entire Disposal Site [310 CMR 40.0442(3)(g)]

During pre-construction site work, site conditions will be monitored for the presence of potential sources of COCs. If impacted soil or other previously unknown potential sources are identified, an amendment to this RAM Plan will be prepared and submitted to MassDEP documenting the remedial response actions to be taken.

FIGURES



SOURCE. OFFICE OF GEOGRAPHIC INFORMATION (MassGIS), COMMONWEALTH OF MASSACHUSETTS, MassIT.
USGS TOPOGRAPHIC MAPS: BOSTON NORTH AND BOSTON SOUTH, MA QUADRANGLES

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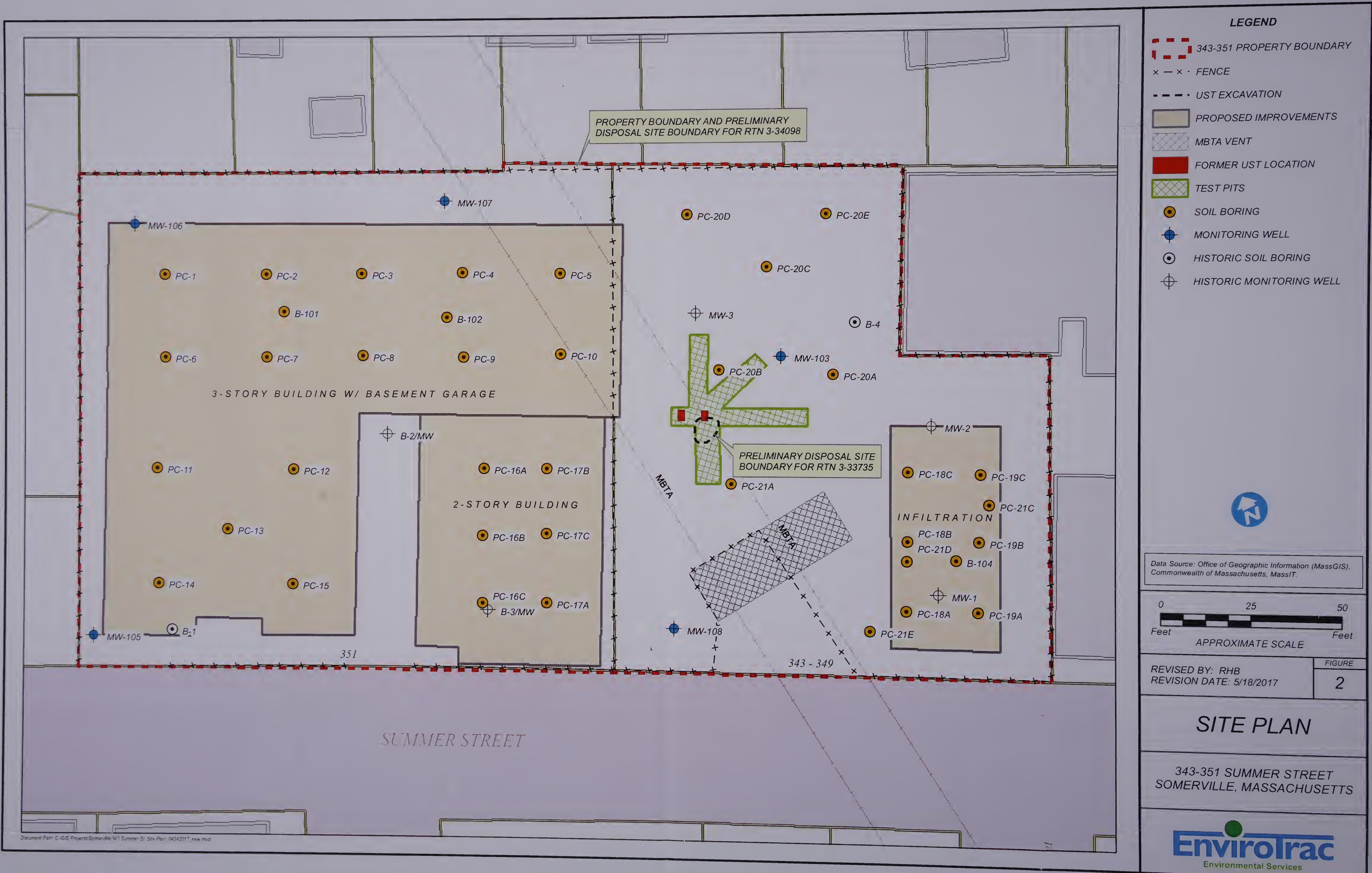
LOCUS MAP

343 - 351 SUMMER STREET
SOMERVILLE, MASSACHUSETTS

DRAWN BY	PROJECT	DATE	FIGURE
RHB	03.990202.01	4/23/2017	1



Data Source: Office of Geographic Information (MassGIS), Commonwealth of Massachusetts, MassIT.

REVISED BY: RHB
REVISION DATE: 5/18/2017

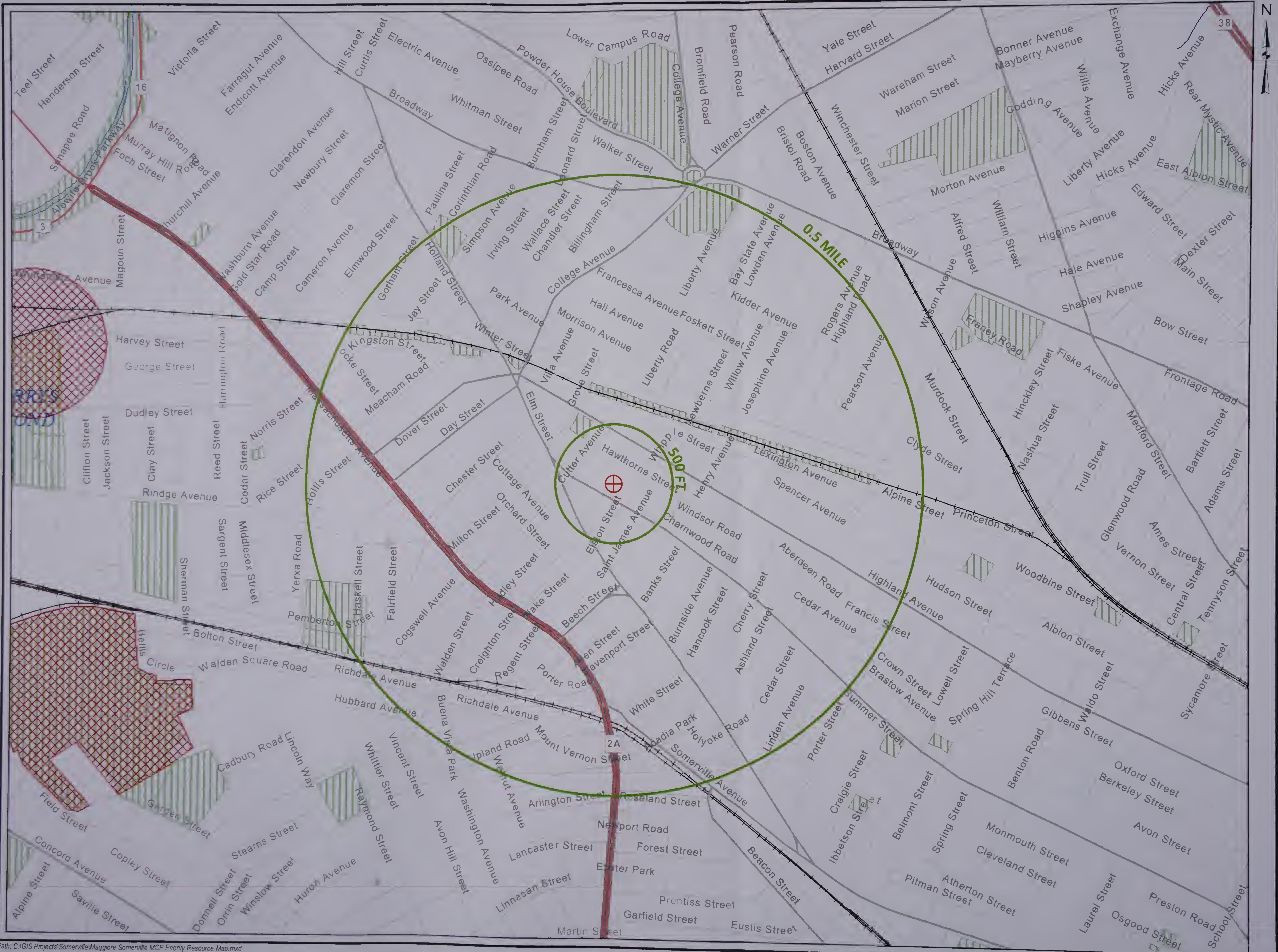
FIGURE
2

SITE PLAN

343-351 SUMMER STREET
SOMERVILLE, MASSACHUSETTS

EnviroTrac
Environmental Services

Document Path C:\GIS Projects\Somerville\343 Summer St\Site Plan_04242017_new.mxd



LEGEND

- Railroads
- Pipeline
- Pipeline Arbitrary Extension
- ☒ Solid Waste Landfills
- ▥ EPA Sole Source Aquifer
- 🟨 NHESP Priority Habitats of Rare Species
- NHESP Certified Vernal Pools
- ▨ ACECs
- ▥ Protected Open Space

Roads

- Limited Access Highway
- Multi-lane Hwy, not limited access
- Other Numbered Highway
- Major Road, Collector
- Minor Road, Arterial

USGS Hydrography

- Perennial Stream
- Intermittent Stream
- Shoreline
- Ditch/Canal
- Aqueduct
- Dam

DEP Wetlands

- Marsh/Bog
- Wooded Marsh
- Cranberry Bog
- Salt Marsh
- Open Water
- Reservoir (with PWSID)
- Tidal Flats
- Beach/Dune

Public Water Supplies

- ● Community Groundwater Source
- ● Surface Water Intake
- ● Non-Community Groundwater Source
- ● Emergency Surface Water
- ▨ DEP Approved Zone IIs
- ▨ Interim Wellhead Protection Areas
- ▤ Surface Water Supply Zone A

Non-Potential Drinking Water Source Areas

- High-Yield
- Medium-Yield

Potentially Productive Aquifers

- 🟩 High-Yield
- Medium-Yield

Data Source: Office of Geographic Information (MassGIS), Commonwealth of Massachusetts, MassIT.

0 800 1,600
Feet Feet
APPROXIMATE SCALE

REVISED BY: RHB
REVISION DATE: 4/23/2017

FIGURE
3

MassGIS PRIORITY RESOURCE MAP
500 foot and 0.5 mile Radii

343 - 351 SUMMER STREET
SOMERVILLE, MASSACHUSETTS

EnviroTrac
Environmental Services

Path: C:\GIS Projects\Somerville\Maggiore Somerville MCP Priority Resource Map.mxd

TABLES

TABLE 1
SUMMARY OF MONITORING WELL GAUGING DATA

Maggiore Somerville
343-351 Summer Street
Somerville, Massachusetts

Monitoring Well ID	Gauging Date	Top of Casing Elevation[1] (feet)	Depth to Water (feet)	Depth to Bottom (feet)	Water Table Elevation (feet)
MW-1	8/8/2016		--	--	
	8/17/2016	101.83	14.30	22.05	87.53
	3/31/2017	101.83	11.15	22.15	90.68
	4/19/2017	101.83	11.01	22.05	90.82
MW-2	8/8/2016		--	--	
	8/17/2016	101.98	12.60	22.21	89.38
	3/31/2017	101.98	9.85	21.97	92.13
	4/19/2017	101.98	9.88	21.95	92.10
MW-3	8/8/2016		--	--	
	8/17/2016	101.59	16.58	22.00	85.01
	3/31/2017	101.59	8.35	22.00	93.24
	4/19/2017	101.59	8.71	22.00	92.88
MW-103	8/8/2016		20.12	23.13	
	8/17/2016	102.72	16.81	23.25	85.91
	3/31/2017	102.72	10.12	23.23	92.60
	4/19/2017	102.72	10.47	23.20	92.25
MW-108	8/8/2016		21.00	22.85	
	8/17/2016	101.59	19.50	22.70	82.09
	3/31/2017	101.59	12.19	22.71	89.40
	4/19/2017	101.59	12.00	22.67	89.59
B-2/MW	8/8/2016		--	--	
	8/17/2016	99.29	12.22	14.85	87.07
	3/31/2017	99.29	10.87	14.85	88.42
	4/19/2017	99.29	10.53	14.60	88.76
B-3/MW	8/8/2016		--	--	
	8/17/2016	98.36	11.97	14.35	86.39
	3/31/2017	98.36	10.47	14.35	87.89
	4/19/2017	98.36	9.70	14.40	88.66
MW-105	8/8/2016		11.27	20.04	
	8/17/2016	97.10	11.31	19.71	85.79
	3/31/2017	97.10	9.99	19.71	87.11
	4/19/2017	97.10	9.58	19.75	87.52
MW-106	8/8/2016		12.90	17.80	
	8/17/2016	98.17	10.41	17.80	87.76
	3/31/2017	98.17	5.17	17.80	93.00
	4/19/2017	98.17	5.93	17.60	92.24
MW-107	8/8/2016		17.81	19.70	
	8/17/2016	99.56	13.17	19.82	86.39
	3/31/2017	99.56	8.02	19.71	91.54
	4/19/2017	99.56	8.12	19.85	91.44

NOTES:

-- is not measured

Latest Top of Casing survey performed was on August 17, 2016.

[1] Based on assumed benchmark = 100.00' Northeast corner of MBTA Vent Pad.

TABLE 2
SUMMARY OF GROUNDWATER ANALYICAL DATA

Maggiore Somerville
343-351 Summer Street
Somerville, Massachusetts

Monitoring Well ID	MW-1		MW-2		MW-3		MW-103		MW-105		MW-106		MW-107		MW-108		B-2/MW		B-3/MW		**MCP Reportable Concentrations (µg/L)**	**MCP Method 1 Groundwater Standards (µg/L)**	
Depth to Groundwater (feet)	14.30		12.60		16.58		16.81		11.31		10.41		13.17		19.5		12.22		11.97				
Screen Interval BGS (feet)	9-19		9-19		9-19		10-20		10-20		8-18		10-20		10-20		UNK		UNK				
Depth of Well (feet)	22		22		22		20		20		18		20		20		15		15		RCGW-2	GW-2	GW-3
1,4-Dioxane	<25	--	<25	--	<25	--	<25	--	<25	--	<25	--	<25	--	--	--	<25	--	<25	--	6,000	6,000	50,000
Ethyl Ether	<5.0	--	<5.0	--	<5.0	--	<5.0	--	<5.0	--	<5.0	--	<5.0	--	--	--	<5.0	--	<5.0	--	10,000	NE	NE
Ethylbenzene	<1.0	--	<1.0	--	<1.0	--	<1.0	--	<1.0	--	<1.0	--	<1.0	--	--	--	<1.0	--	<1.0	--	5,000	20,000	5,000
Hexachlorobutadiene	<5.0	--	<5.0	--	<5.0	--	<5.0	--	<5.0	--	<5.0	--	<5.0	--	--	--	<5.0	--	<5.0	--	50	50	3,000
2-Hexanone	<10	--	<10	--	<10	--	<10	--	<10	--	<10	--	<10	--	--	--	<10	--	<10	--	10,000	NE	NE
Isopropylbenzene	<5.0	--	<5.0	--	<5.0	--	<5.0	--	<5.0	--	<5.0	--	<5.0	--	--	--	<5.0	--	<5.0	--	100,000	NE	NE
p-Isopropyltoluene	<5.0	--	<5.0	--	<5.0	--	<5.0	--	<5.0	--	<5.0	--	<5.0	--	--	--	<5.0	--	<5.0	--	NE	NE	NE
Methyl Tert Butyl Ether	<1.0	--	<1.0	--	<1.0	--	<1.0	--	<1.0	--	<1.0	--	<1.0	--	--	--	<1.0	--	<1.0	--	5,000	50,000	50,000
4-Methyl-2-pentanone (MIBK)	<5.0	--	<5.0	--	<5.0	--	<5.0	--	<5.0	--	<5.0	--	<5.0	--	--	--	<5.0	--	<5.0	--	50,000	50,000	50,000
Methylene bromide	<5.0	--	<5.0	--	<5.0	--	<5.0	--	<5.0	--	<5.0	--	<5.0	--	--	--	<5.0	--	<5.0	--	50,000	NE	NE
Methylene chloride	<2.0	--	<2.0	--	<2.0	--	<2.0	--	<2.0	--	<2.0	--	<2.0	--	--	--	<2.0	--	<2.0	--	2,000	2,000	50,000
Naphthalene	<5.0	--	<5.0	--	<5.0	--	<5.0	--	<5.0	--	<5.0	--	<5.0	--	--	--	<5.0	--	<5.0	--	700	700	20,000
n-Propylbenzene	<5.0	--	<5.0	--	<5.0	--	<5.0	--	<5.0	--	<5.0	--	<5.0	--	--	--	<5.0	--	<5.0	--	10,000	NE	NE
Styrene	<5.0	--	<5.0	--	<5.0	--	<5.0	--	<5.0	--	<5.0	--	<5.0	--	--	--	<5.0	--	<5.0	--	100	100	6,000
tert-Amyl Methyl Ether	<2.0	--	<2.0	--	<2.0	--	<2.0	--	<2.0	--	<2.0	--	<2.0	--	--	--	<2.0	--	<2.0	--	NE	NE	NE
tert-Butyl Ethyl Ether	<2.0	--	<2.0	--	<2.0	--	<2.0	--	<2.0	--	<2.0	--	<2.0	--	--	--	<2.0	--	<2.0	--	NE	NE	NE
1,1,1,2-Tetrachloroethane	<1.0	--	<1.0	--	<1.0	--	<1.0	--	<1.0	--	<1.0	--	<1.0	--	--	--	<1.0	--	<1.0	--	100	10	50,000
1,1,2,2-Tetrachloroethane	<0.50	--	<0.50	--	<0.50	--	<0.50	--	<0.50	--	<0.50	--	<0.50	--	--	--	<0.50	--	<0.50	--	9	9	50,000
Tetrachloroethene	<1.0	--	<1.0	--	<1.0	--	<1.0	--	<1.0	--	<1.0	--	<1.0	--	--	--	<1.0	--	<1.0	--	50	50	30,000
Tetrahydrofuran	<10	--	<10	--	<10	--	<10	--	<10	--	<10	--	<10	--	--	--	<10	--	<10	--	50,000	NE	NE
Toluene	<1.0	--	<1.0	--	<1.0	--	<1.0	--	<1.0	--	<1.0	--	<1.0	--	--	--	<1.0	--	<1.0	--	40,000	50,000	40,000
1,2,3-Trichlorobenzene	<5.0	--	<5.0	--	<5.0	--	<5.0	--	<5.0	--	<5.0	--	<5.0	--	--	--	<5.0	--	<5.0	--	NE	NE	NE
1,2,4-Trichlorobenzene	<5.0	--	<5.0	--	<5.0	--	<5.0	--	<5.0	--	<5.0	--	<5.0	--	--	--	<5.0	--	<5.0	--	200	200	50,000
1,1,1-Trichloroethane	<1.0	--	<1.0	--	<1.0	--	<1.0	--	<1.0	--	<1.0	--	<1.0	--	--	--	<1.0	--	<1.0	--	4,000	4,000	20,000
1,1,2-Trichloroethane	<1.0	--	<1.0	--	<1.0	--	<1.0	--	<1.0	--	<1.0	--	<1.0	--	--	--	<1.0	--	<1.0	--	900	900	50,000
Trichloroethene	<1.0	--	<1.0	--	<1.0	--	<1.0	--	<1.0	--	<1.0	--	<1.0	--	--	--	<1.0	--	<1.0	--	5	5	5,000
Trichlorofluoromethane	<1.0	--	<1.0	--	<1.0	--	<1.0	--	<1.0	--	<1.0	--	<1.0	--	--	--	<1.0	--	<1.0	--	100,000	NE	NE
1,2,3-Trichloropropane	<5.0	--	<5.0	--	<5.0	--	<5.0	--	<5.0	--	<5.0	--	<5.0	--	--	--	<5.0	--	<5.0	--	10,000	NE	NE
1,2,4-Trimethylbenzene	<5.0	--	<5.0	--	<5.0	--	<5.0	--	<5.0	--	<5.0	--	<5.0	--	--	--	<5.0	--	<5.0	--	100,000	NE	NE
1,3,5-Trimethylbenzene	<5.0	--	<5.0	--	<5.0	--	<5.0	--	<5.0	--	<5.0	--	<5.0	--	--	--	<5.0	--	<5.0	--	1,000	NE	NE
Vinyl chloride	<1.0	--	<1.0	--	<1.0	--	<1.0	--	<1.0	--	<1.0	--	<1.0	--	--	--	<1.0	--	<1.0	--	2	2	50,000
m,p-Xylene	<1.0	--	<1.0	--	<1.0	--	<1.0	--	<1.0	--	<1.0	--	<1.0	--	--	--	<1.0	--	<1.0	--	3,000	3,000	5,000
o-Xylene	<1.0	--	<1.0	--	<1.0	--	<1.0	--	<1.0	--	<1.0	--	<1.0	--	--	--	<1.0	--	<1.0	--	3,000	3,000	5,000
Xylene (total)	<1.0	--	<1.0	--	<1.0	--	<1.0	--	<1.0	--	<1.0	--	<1.0	--	--	--	<1.0	--	<1.0	--	3,000	3,000	5,000

NOTES:

-- is not applicable or not analyzed
µg/L is micrograms per liter
NE is not established
BGS is below ground surface

MTBE is methyl tert butyl ether.
<2.0 is not detected at or above the laboratory reporting limit of 2.0 µg/L.
Analytes detected above the method reporting limit are in **Bold**.
Analytes detected above applicable MCP groundwater standards are in Red.

TABLE 2
SUMMARY OF GROUNDWATER ANALYICAL DATA

Maggiore Somerville
343-351 Summer Street
Somerville Massachusetts

Monitoring Well ID	MW-1		MW-2		MW-3		MW-103		MW-105		MW-106		MW-107		MW-108		B-2/MW		B-3/MW		MCP Reportable Concentrations (µg/L)	MCP Method 1 Groundwater Standards (µg/L)	
Depth to Groundwater (feet)	14.30		12.60		16.58		16.81		11.31		10.41		13.17		19.5		12.22		11.97				
Screen Interval BGS (feet)	9-19		9-19		9-19		10-20		10-20		8-18		10-20		10-20		UNK		UNK				
Depth of Well (feet)	22		22		22		20		20		18		20		20		15		15		RCGW-2	GW-2	GW-3
VOLATILE PETROLEUM HYDROCARBONS (µg/L)																							
C5-C8 Aliphatics	<50	--	<50	--	<50	--	<50	--	<50	--	<50	--	<50	--	--	--	<50	--	<50	--	3,000	3,000	50,000
C9-C12 Aliphatics	<50	--	<50	--	<50	--	<50	--	<50	--	<50	--	<50	--	--	--	<50	--	<50	--	5,000	5,000	50,000
C9-C10 Aromatics	<50	--	<50	--	<50	--	<50	--	<50	--	<50	--	<50	--	--	--	<50	--	<50	--	4,000	4,000	50,000
Benzene	<1.0	--	<1.0	--	<1.0	--	<1.0	--	<1.0	--	<1.0	--	<1.0	--	--	--	<1.0	--	<1.0	--	1,000	1,000	10,000
Ethylbenzene	<2.0	--	<2.0	--	<2.0	--	<2.0	--	<2.0	--	<2.0	--	<2.0	--	--	--	<2.0	--	<2.0	--	5,000	20,000	5,000
MTBE	<1.0	--	<1.0	--	<1.0	--	<1.0	--	<1.0	--	<1.0	--	<1.0	--	--	--	<1.0	--	<1.0	--	5,000	50,000	50,000
Naphthalene	<3.0	--	<3.0	--	<3.0	--	<3.0	--	<3.0	--	<3.0	--	<3.0	--	--	--	<3.0	--	<3.0	--	700	700	20,000
Toluene	<2.0	--	<2.0	--	<2.0	--	<2.0	--	<2.0	--	<2.0	--	<2.0	--	--	--	<2.0	--	<2.0	--	40,000	50,000	40,000
Xylenes (total)	<4.0	--	<4.0	--	<4.0	--	<4.0	--	<4.0	--	<4.0	--	<4.0	--	--	--	<4.0	--	<4.0	--	3,000	3,000	5,000
EXTRACTABLE PETROLEUM HYDROCARBONS (µg/L)																							
C9-C18 Aliphatics	<110	<110	<110	<110	<120	<110	<120	<110	<110	<110	<120	<110	<130	<110	<100	<110	<110	<110	<110	<110	5,000	5,000	50,000
C19-C36 Aliphatics	<110	<110	**362**	<110	<120	<110	<120	<110	<110	<110	<120	<110	<130	<110	<100	<110	<110	<110	<110	<110	50,000	NE	50,000
C11-C22 Aromatics	<110	<110	<110	<110	<120	<110	<120	<110	<110	<110	<120	<110	<130	<110	<100	<110	<110	<110	<110	<110	5,000	50,000	5,000
Acenaphthene	<5.5	<0.11	<5.6	<0.11	<5.9	<0.11	<6.1	<0.11	<5.6	<0.11	<5.8	<0.11	<6.3	**0.14**	<5.1	<0.11	<5.6	<0.11	<5.6	<0.11	600	NE	10,000
Acenaphthylene	<5.5	<0.11	<5.6	<0.11	<5.9	<0.11	<6.1	<0.11	<5.6	<0.11	<5.8	<0.11	<6.3	**0.14**	<5.1	<0.11	<5.6	<0.11	<5.6	<0.11	40	10,000	40
Anthracene	<5.5	<0.11	<5.6	<0.11	<5.9	<0.11	<6.1	<0.11	<5.6	<0.11	<5.8	<0.11	<6.3	**0.36**	<5.1	<0.11	<5.6	<0.11	<5.6	<0.11	30	NE	30
Benzo(a)anthracene	<5.5	<0.056	<5.6	**0.062**	<5.9	<0.057	<6.1	**0.24**	<5.6	<0.055	<5.8	<0.054	<6.3	**0.89**	<5.1	**0.06**	<5.6	<0.054	<5.6	<0.056	1,000	NE	1,000
Benzo(a)pyrene	<5.5	<0.11	<5.6	**0.11**	<5.9	<0.11	<6.1	**0.25**	<5.6	<0.11	<5.8	<0.11	<6.3	**0.88**	<5.1	**0.11**	<5.6	<0.11	<5.6	<0.11	500	NE	500
Benzo(b)fluoranthene	<5.5	<0.056	<5.6	**0.069**	<5.9	<0.057	<6.1	**0.27**	<5.6	<0.055	<5.8	<0.054	<6.3	**1.5**	<5.1	**0.055**	<5.6	<0.054	<5.6	<0.056	400	NE	400
Benzo(g,h,i)perylene	<5.5	<0.11	<5.6	<0.11	<5.9	<0.11	<6.1	**0.14**	<5.6	<0.11	<5.8	<0.11	<6.3	**0.72**	<5.1	<0.11	<5.6	<0.11	<5.6	<0.11	20	NE	20
Benzo(k)fluoranthene	<5.5	<0.11	<5.6	<0.11	<5.9	<0.11	<6.1	**0.13**	<5.6	<0.11	<5.8	<0.11	<6.3	**0.65**	<5.1	<0.11	<5.6	<0.11	<5.6	<0.11	100	NE	100
Chrysene	<5.5	<0.11	<5.6	<0.11	<5.9	<0.11	<6.1	**0.21**	<5.6	<0.11	<5.8	<0.11	<6.3	**1.1**	<5.1	<0.11	<5.6	<0.11	<5.6	<0.11	70	NE	70
Dibenz(a,h)anthracene	<5.5	<0.11	<5.6	<0.11	<5.9	<0.11	<6.1	<0.11	<5.6	<0.11	<5.8	<0.11	<6.3	**0.25**	<5.1	<0.11	<5.6	<0.11	<5.6	<0.11	40	NE	40
Fluoranthene	<5.5	<0.11	<5.6	**0.11**	<5.9	<0.11	<6.1	**0.51**	<5.6	<0.11	<5.8	<0.11	<6.3	**2.1**	<5.1	**0.11**	<5.6	<0.11	<5.6	<0.11	200	NE	200
Fluorene	<5.5	<0.11	<5.6	<0.11	<5.9	<0.11	<6.1	<0.11	<5.6	<0.11	<5.8	<0.11	<6.3	**0.17**	<5.1	<0.11	<5.6	<0.11	<5.6	<0.11	40	NE	40
Indeno(1,2,3-cd)pyrene	<5.5	<0.11	<5.6	**0.16**	<5.9	<0.11	<6.1	**0.27**	<5.6	<0.11	<5.8	<0.11	<6.3	**1**	<5.1	**0.14**	<5.6	<0.11	<5.6	<0.11	100	NE	100
2-Methylnaphthalene	<5.5	<0.22	<5.6	<0.22	<5.9	<0.23	<6.1	<0.22	<5.6	<0.22	<5.8	<0.22	<6.3	<0.22	<5.1	<0.22	<5.6	<0.22	<5.6	<0.22	2,000	2,000	20,000
Naphthalene	<5.5	**0.27**	<5.6	**0.26**	<5.9	**0.28**	<6.1	**0.46**	<5.6	**0.23**	<5.8	**0.26**	<6.3	**0.31**	<5.1	<0.22	<5.6	**0.28**	<5.6	**0.26**	700	700	20,000
Phenanthrene	<5.5	**0.056**	<5.6	**0.066**	<5.9	<0.057	<6.1	**0.3**	<5.6	**0.073**	<5.8	**0.10**	<6.3	**1.2**	<5.1	**0.072**	<5.6	<0.054	<5.6	<0.056	10,000	NE	10,000
Pyrene	<5.5	<0.11	<5.6	<0.11	<5.9	<0.11	<6.1	**0.42**	<5.6	<0.11	<5.8	<0.11	<6.3	**1.8**	<5.1	<0.11	<5.6	<0.11	<5.6	<0.11	20	NE	20
METALS (µg/L)																							
Antimony	<6.0	<6.0	<6.0	<6.0	<6.0	<6.0	<6.0	<6.0	<6.0	<6.0	<6.0	<6.0	<6.0	<6.0	--	<6.0	<6.0	<6.0	<6.0	<6.0	8,000	NE	8,000
Arsenic	**29.5**	**22.5**	**4.4**	**13.4**	<4.0	<3.0	**24.3**	<3.0	<4.0	<3.0	6	<3.0	<4.0	<3.0	--	<3.0	<4.0	<3.0	**5.7**	<3.0	900	NE	900
Barium	<50	<50	<50	<50	<50	<50	<50	<50	<50	**66.9**	<50	<50	<50	<50	--	<50	<50	<50	<50	<50	50,000	NE	50,000
Beryllium	<4.0	<1.0	<4.0	<1.0	<4.0	<1.0	<4.0	<1.0	<4.0	<1.0	<4.0	<1.0	<4.0	<1.0	--	<1.0	<4.0	<1.0	<4.0	<1.0	200	NE	200
Cadmium	<4.0	<3.0	<4.0	<3.0	<4.0	<3.0	<4.0	<3.0	<4.0	<3.0	<4.0	<3.0	<4.0	<3.0	--	<3.0	<4.0	<3.0	<4.0	<3.0	4	NE	4
Chromium	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	--	<10	<10	<10	<10	<10	300	NE	300
Lead	<5.0	<3.0	<5.0	<3.0	<5.0	<3.0	<5.0	<3.0	<5.0	**3.3**	<5.0	<3.0	<5.0	**8.5**	--	<3.0	<5.0	<3.0	<5.0	<3.0	10	NE	10
Mercury	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	--	<0.20	<0.20	<0.20	<0.20	<0.20	20	NE	20
Nickel	<40	<10	<40	<10	<40	<10	<40	<10	<40	<10	<40	<10	<40	<10	--	<10	<40	<10	<40	<10	200	NE	200
Selenium	<10	<10	<10	<10	<10	<10	<10	<10	**11.6**	**14.6**	<10	<10	**11.3**	**11.8**	--	<10	<10	**17.8**	<10	<10	100	NE	100
Silver	<5.0	<10	<5.0	<10	<5.0	<10	<5.0	<10	<5.0	<10	<5.0	<10	<5.0	<10	--	<10	<5.0	<10	<5.0	<10	7	NE	7
Thallium	<5.0	<2.0	<5.0	<2.0	<5.0	<2.0	<5.0	<2.0	<5.0	<2.0	<5.0	<2.0	<5.0	<2.0	--	<2.0	<5.0	<2.0	<5.0	<2.0	3,000	NE	3,000
Vanadium	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	--	<10	<10	<10	<10	<10	4,000	NE	4,000
Zinc	<20	<20	<20	<20	<20	<20	<20	<20	**26.1**	**293**	<20	<20	<20	<20	--	<20	<20	**26**	<20	<20	900	NE	900

NOTES:

-- is not applicable or not analyzed
µg/L is micrograms per liter
NE is not established
BGS is below ground surface

MTBE is methyl tert butyl ether.
<2.0 is not detected at or above the laboratory reporting limit of 2.0 µg/L.
Analytes detected above the method reporting limit are in **Bold.**
Analytes detected above applicable MCP groundwater standards are in Red.

TABLE 3
SUMMARY OF SOIL ANALYTICAL DATA - VOCs

Maggiore Somerville
343-351 Summer Street
Somerville Massachusetts

Sample Date	August 8, 2016								August 12, 2016									March 28, 2017							MCP Method 1 Soil Standards (mg/kg)		MCP Reportable Concentrations (mg/kg)	MCP Method 3 Upper Concentration Limits (mg/kg)
Sample ID	B-101	B-102	B-103	B-104	MW-105	MW-106	MW-107	MW-108	S-1	S-2	S-3	S-4	S-5	S-6	S-7	S-8	Stockpile	PC-1 0-15' COMP	PC-1 0-5'	PC-1 10-15'	PC-1 5-10'	PC-2 0-15' COMP	PC-2 0-5'	PC-2 10-15'	S-1		RCS-1	
Depth (feet)	0-10	0-10	13	0-10	13.5	9	13	13.5	8-9	8	8.5	7-8	7	5	6	6	NA	0-15	0-5	10-15	5-10	0-15	0-5	10-15	GW-2	GW-3		
PID (ppmv)	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	225.1	BDL	BDL	BDL	BDL	BDL	BDL	BDL				
VOLATILE ORGANIC COMPOUNDS (mg/kg)																												
Acetone	**0.02**	<0.012	--	**0.02**	--	--	--	--	--	--	--	--	--	--	--	--	<3.3	**0.0542**	--	--	--	**0.0284**	--	--	50	400	6	10,000
Benzene	<0.00050	**0.001**	--	<0.00042	--	--	--	--	--	--	--	--	--	--	--	--	**0.523**	<0.00056	--	--	--	<0.00058	--	--	40	40	2	10,000
Bromobenzene	<0.0050	<0.0061	--	<0.0042	--	--	--	--	--	--	--	--	--	--	--	--	<1.7	<0.0056	--	--	--	<0.0058	--	--	NE	NE	100	NE
Bromochloromethane	<0.0050	<0.0061	--	<0.0042	--	--	--	--	--	--	--	--	--	--	--	--	<1.7	<0.0056	--	--	--	<0.0058	--	--	NE	NE	NE	NE
Bromodichloromethane	<0.0020	<0.0024	--	<0.0017	--	--	--	--	--	--	--	--	--	--	--	--	<0.66	<0.0022	--	--	--	<0.0023	--	--	0.1	30	0.1	5,000
Bromoform	<0.0020	<0.0024	--	<0.0017	--	--	--	--	--	--	--	--	--	--	--	--	<0.66	<0.0022	--	--	--	<0.0023	--	--	1	300	0.1	10,000
Bromomethane	<0.0020	<0.0024	--	<0.0017	--	--	--	--	--	--	--	--	--	--	--	--	<0.66	<0.011	--	--	--	<0.012	--	--	0.5	30	0.5	6,000
2-Butanone (MEK)	<0.010	<0.012	--	<0.0085	--	--	--	--	--	--	--	--	--	--	--	--	<3.3	<0.011	--	--	--	<0.012	--	--	50	400	4	10,000
n-Butylbenzene	<0.0050	<0.0061	--	<0.0042	--	--	--	--	--	--	--	--	--	--	--	--	**8.83**	<0.0056	--	--	--	<0.0058	--	--	NE	NE	NE	NE
sec-Butylbenzene	<0.0050	<0.0061	--	<0.0042	--	--	--	--	--	--	--	--	--	--	--	--	**2.59**	<0.0056	--	--	--	<0.0058	--	--	NE	NE	NE	NE
tert-Butylbenzene	<0.0050	<0.0061	--	<0.0042	--	--	--	--	--	--	--	--	--	--	--	--	<1.7	<0.0056	--	--	--	<0.0058	--	--	NE	NE	100	NE
Carbon disulfide	<0.0050	<0.0061	--	<0.0042	--	--	--	--	--	--	--	--	--	--	--	--	<1.7	<0.0056	--	--	--	<0.0058	--	--	NE	NE	100	NE
Carbon tetrachloride	<0.0020	<0.0024	--	<0.0017	--	--	--	--	--	--	--	--	--	--	--	--	<0.66	<0.0022	--	--	--	<0.0023	--	--	5	30	5	10,000
Chlorobenzene	<0.0020	<0.0024	--	<0.0017	--	--	--	--	--	--	--	--	--	--	--	--	<0.66	<0.0022	--	--	--	<0.0023	--	--	3	100	1	10,000
Chloroethane	<0.0050	<0.0061	--	<0.0042	--	--	--	--	--	--	--	--	--	--	--	--	<1.7	<0.011	--	--	--	<0.012	--	--	NE	NE	100	NE
Chloroform	<0.0020	<0.0024	--	<0.0017	--	--	--	--	--	--	--	--	--	--	--	--	<0.66	<0.0022	--	--	--	<0.0023	--	--	0.2	500	0.2	10,000
Chloromethane	<0.0050	<0.0061	--	<0.0042	--	--	--	--	--	--	--	--	--	--	--	--	<1.7	<0.0056	--	--	--	<0.0058	--	--	NE	NE	100	NE
o-Chlorotoluene	<0.0050	<0.0061	--	<0.0042	--	--	--	--	--	--	--	--	--	--	--	--	<1.7	<0.0056	--	--	--	<0.0058	--	--	NE	NE	100	NE
p-Chlorotoluene	<0.0050	<0.0061	--	<0.0042	--	--	--	--	--	--	--	--	--	--	--	--	<1.7	<0.0056	--	--	--	<0.0058	--	--	NE	NE	NE	NE
Di-isopropyl ether	<0.0020	<0.0024	--	<0.0017	--	--	--	--	--	--	--	--	--	--	--	--	<0.66	<0.0022	--	--	--	<0.0023	--	--	NE	NE	100	NE
1,2-Dibromo-3-chloropropane	<0.0050	<0.0061	--	<0.0042	--	--	--	--	--	--	--	--	--	--	--	--	<1.7	<0.0056	--	--	--	<0.0058	--	--	NE	NE	10	NE
Dibromochloromethane	<0.0020	<0.0024	--	<0.0017	--	--	--	--	--	--	--	--	--	--	--	--	<0.66	<0.0056	--	--	--	<0.0058	--	--	0.03	20	0.005	5,000
1,2-Dibromoethane	<0.0020	<0.0024	--	<0.0017	--	--	--	--	--	--	--	--	--	--	--	--	<0.66	<0.0022	--	--	--	<0.0023	--	--	0.1	1	0.1	400
1,2-Dichlorobenzene	<0.0020	<0.0024	--	<0.0017	--	--	--	--	--	--	--	--	--	--	--	--	**0.877**	<0.0022	--	--	--	<0.0023	--	--	100	300	9	10,000
1,3-Dichlorobenzene	<0.0020	<0.0024	--	<0.0017	--	--	--	--	--	--	--	--	--	--	--	--	<0.66	<0.0022	--	--	--	<0.0023	--	--	100	100	3	5,000
1,4-Dichlorobenzene	<0.0020	<0.0024	--	<0.0017	--	--	--	--	--	--	--	--	--	--	--	--	<0.66	<0.0022	--	--	--	<0.0023	--	--	1	80	0.7	10,000
Dichlorodifluoromethane	<0.0020	<0.0024	--	<0.0017	--	--	--	--	--	--	--	--	--	--	--	--	<0.66	<0.0056	--	--	--	<0.0058	--	--	NE	NE	1000	NE
1,1-Dichloroethane	<0.0020	<0.0024	--	<0.0017	--	--	--	--	--	--	--	--	--	--	--	--	<0.66	<0.0022	--	--	--	<0.0023	--	--	9	500	0.4	10,000
1,2-Dichloroethane	<0.0020	<0.0024	--	<0.0017	--	--	--	--	--	--	--	--	--	--	--	--	<0.66	<0.0022	--	--	--	<0.0023	--	--	0.1	20	0.1	9,000
1,1-Dichloroethene	<0.0020	<0.0024	--	<0.0017	--	--	--	--	--	--	--	--	--	--	--	--	<0.66	<0.0022	--	--	--	<0.0023	--	--	40	500	3	10,000
cis-1,2-Dichloroethene	<0.0020	<0.0024	--	<0.0017	--	--	--	--	--	--	--	--	--	--	--	--	<0.66	<0.0022	--	--	--	<0.0023	--	--	0.1	100	0.1	5,000
trans-1,2-Dichloroethene	<0.0020	<0.0024	--	<0.0017	--	--	--	--	--	--	--	--	--	--	--	--	<0.66	<0.0022	--	--	--	<0.0023	--	--	1	500	1	10,000
1,2-Dichloropropane	<0.0020	<0.0024	--	<0.0017	--	--	--	--	--	--	--	--	--	--	--	--	<0.66	<0.0022	--	--	--	<0.0023	--	--	0.1	30	0.1	10,000
1,3-Dichloropropane	<0.0050	<0.0061	--	<0.0042	--	--	--	--	--	--	--	--	--	--	--	--	<1.7	<0.0056	--	--	--	<0.0058	--	--	NE	NE	500	NE
2,2-Dichloropropane	<0.0050	<0.0061	--	<0.0042	--	--	--	--	--	--	--	--	--	--	--	--	<1.7	<0.0056	--	--	--	<0.0058	--	--	NE	NE	NE	NE
1,1-Dichloropropene	<0.0050	<0.0061	--	<0.0042	--	--	--	--	--	--	--	--	--	--	--	--	<1.7	<0.0056	--	--	--	<0.0058	--	--	NE	NE	NE	NE
cis-1,3-Dichloropropene	<0.0020	<0.0024	--	<0.0017	--	--	--	--	--	--	--	--	--	--	--	--	<0.66	<0.0022	--	--	--	<0.0023	--	--	NE	NE	0.01	NE
trans-1,3-Dichloropropene	<0.0020	<0.0024	--	<0.0017	--	--	--	--	--	--	--	--	--	--	--	--	<0.66	<0.0022	--	--	--	<0.0023	--	--	NE	NE	0.01	NE
1,4-Dioxane	<0.13	<0.15	--	<0.11	--	--	--	--	--	--	--	--	--	--	--	--	<41	<0.14	--	--	--	<0.14	--	--	6	20	0.2	5,000
Ethyl Ether	<0.0050	<0.0061	--	<0.0042	--	--	--	--	--	--	--	--	--	--	--	--	<1.7	<0.0056	--	--	--	<0.0058	--	--	NE	NE	100	NE
Ethylbenzene	<0.0020	<0.0024	--	<0.0017	--	--	--	--	--	--	--	--	--	--	--	--	**13.1**	<0.0022	--	--	--	<0.0023	--	--	500	500	40	10,000
Hexachlorobutadiene	<0.0050	<0.0061	--	<0.0042	--	--	--	--	--	--	--	--	--	--	--	--	<1.7	<0.0056	--	--	--	<0.0058	--	--	30	30	30	1,000
2-Hexanone	<0.010	<0.012	--	<0.0085	--	--	--	--	--	--	--	--	--	--	--	--	<3.3	<0.0056	--	--	--	<0.0058	--	--	NE	NE	100	NE
Isopropylbenzene	<0.0050	<0.0061	--	<0.0042	--	--	--	--	--	--	--	--	--	--	--	--	**3.52**	<0.0056	--	--	--	<0.0058	--	--	NE	NE	1000	NE
p-Isopropyltoluene	<0.0050	<0.0061	--	<0.0042	--	--	--	--	--	--	--	--	--	--	--	--	**2.24**	<0.0056	--	--	--	<0.0058	--	--	NE	NE	100	NE
Methyl Tert Butyl Ether	<0.0020	<0.0024	--	<0.0017	--	--	--	--	--	--	--	--	--	--	--	--	<0.66	<0.0022	--	--	--	<0.0023	--	--	100	100	0.1	5,000
4-Methyl-2-pentanone (MIBK)	<0.0050	<0.0061	--	<0.0042	--	--	--	--	--	--	--	--	--	--	--	--	<1.7	<0.0056	--	--	--	<0.0058	--	--	50	400	0.4	10,000
Methylene bromide	<0.0050	<0.0061	--	<0.0042	--	--	--	--	--	--	--	--	--	--	--	--	<1.7	<0.0056	--	--	--	<0.0058	--	--	NE	NE	500	NE
Methylene chloride	<0.0020	<0.0024	--	<0.0017	--	--	--	--	--	--	--	--	--	--	--	--	<0.66	<0.0022	--	--	--	<0.0023	--	--	4	400	0.1	7,000
Naphthalene	<0.0050	<0.0061	--	<0.0042	--	--	--	--	--	--	--	--	--	--	--	--	**48.7**	0.0162	--	--	--	<0.0058	--	--	20	500	4	10,000
n-Propylbenzene	<0.0050	<0.0061	--	<0.0042	--	--	--	--	--	--	--	--	--	--	--	--	**13.5**	<0.0056	--	--	--	<0.0058	--	--	NE	NE	100	NE
Styrene	<0.0050	<0.0061	--	<0.0042	--	--	--	--	--	--	--	--	--	--	--	--	**1.85**	<0.0056	--	--	--	<0.0058	--	--	4	70	3	10,000
tert-Amyl Methyl Ether	<0.0050	<0.0061	--	<0.0042	--	--	--	--	--	--	--	--	--	--	--	--	<1.7	<0.0056	--	--	--	<0.0058	--	--	NE	NE	NE	NE
tert-Butyl Ethyl Ether	<0.0020	<0.0024	--	<0.0017	--	--	--	--	--	--	--	--	--	--	--	--	<0.66	<0.0022	--	--	--	<0.0023	--	--	NE	NE	NE	NE
1,1,1,2-Tetrachloroethane	<0.0050	<0.0061	--	<0.0042	--	--	--	--	--	--	--	--	--	--	--	--	<1.7	<0.0022	--	--	--	<0.0023	--	--	0.1	80	0.1	5,000
1,1,2,2-Tetrachloroethane	<0.0020	<0.0024	--	<0.0017	--	--	--	--	--	--	--	--	--	--	--	--	<0.66	<0.0056	--	--	--	<0.0058	--	--	0.02	10	0.005	4,000
Tetrachloroethene	<0.0020	<0.0024	--	<0.0017	--	--	--	--	--	--	--	--	--	--	--	--	<0.66	<0.0022	--	--	--	<0.0023	--	--	10	30	1	10,000
Tetrahydrofuran	<0.010	<0.012	--	<0.0085	--	--	--	--	--	--	--	--	--	--	--	--	<3.3	<0.011	--	--	--	<0.012	--	--	NE	NE	500	NE
Toluene	<0.0050	<0.0061	--	<0.0042	--	--	--	--	--	--	--	--	--	--	--	--	**13.5**	<0.0056	--	--	--	<0.0058	--	--	500	500	30	10,000
1,2,3-Trichlorobenzene	<0.0050	<0.0061	--	<0.0042	--	--	--	--	--	--	--	--	--	--	--	--	<1.7	<0.0056	--	--	--	<0.0058	--	--	NE	NE	NE	NE
1,2,4-Trichlorobenzene	<0.0050	<0.0061	--	<0.0042	--	--	--	--	--	--	--	--	--	--	--	--	<1.7	<0.0056	--	--	--	<0.0058	--	--	6	700	2	10,000
1,1,1-Trichloroethane	<0.0020	<0.0024	--	<0.0017	--	--	--	--	--	--	--	--	--	--	--	--	<0.66	<0.0022	--	--	--	<0.0023	--	--	500	500	30	10,000
1,1,2-Trichloroethane	<0.0020	<0.0024	--	<0.0017	--	--	--	--	--	--	--	--	--	--	--	--	<0.66	<0.0022	--	--	--	<0.0023	--	--	2	40	0.1	5,000
Trichloroethene	<0.0020	<0.0024	--	<0.0017	--	--	--	--	--	--	--	--	--	--	--	--	<0.66	<0.0022	--	--	--	<0.0023	--	--	0.3	30	0.3	600
Trichlorofluoromethane	<0.0020	<0.0024	--	<0.0017	--	--	--	--	--	--	--	--	--	--	--	--	<0.66	<0.0022	--	--	--	<0.0023	--	--	NE	NE	1000	NE
1,2,3-Trichloropropane	<0.0050	<0.0061	--	<0.0042	--	--	--	--	--	--	--	--	--	--	--	--	<1.7	<0.0056	--	--	--	<0.0058	--	--	NE	NE	100	NE
1,2,4-Trimethylbenzene	<0.0050	<0.0061	--	<0.0042	--	--	--	--	--	--	--	--	--	--	--	--	**127**	<0.0056	--	--	--	<0.0058	--	--	NE	NE	1000	NE
1,3,5-Trimethylbenzene	<0.0050	<0.0061	--	<0.0042	--	--	--	--	--	--	--	--	--	--	--	--	**29.9**	<0.0056	--	--	--	<0.0058	--	--	NE	NE	10	NE
Vinyl chloride	<0.0020	<0.0024	--	<0.0017	--	--	--	--	--	--	--	--	--	--	--	--	<0.66	<0.011	--	--	--	<0.012	--	--	0.7	1	0.7	600
m,p-Xylene	<0.0020	<0.0024	--	<0.0017	--	--	--	--	--	--	--	--	--	--	--	--	**60.6**	<0.0022	--	--	--	<0.0023	--	--	100	500	100	10,000
o-Xylene	<0.0020	<0.0024	--	<0.0017	--	--	--	--	--	--	--	--	--	--	--	--	**29.9**	<0.0022	--	--	--	<0.0023	--	--	100	500	100	10,000
Xylene (total)	<0.0020	<0.0024	--	<0.0017	--	--	--	--	--	--	--	--	--	--	--	--	**90.5**	<0.0022	--	--	--	<0.0023	--	--	100	500	100	10,000

NOTES:

-- is analysis not performed
NE is not established
ND is not detected

mg/kg is milligrams per kilogram
mg/L is milligrams per liter
PID is photoionization detector
ppmv is parts per million by volume

VOC is volatile organic compound
<2.0 indicates not detected at or above the laboratory reporting limit of 2.0 mg/kg
Analytes detected above the method reporting limit are in **Bold**
Analytes detected above MCP Reportable Concentrations are in Red

TABLE 3
SUMMARY OF SOIL ANALYTICAL DATA - VOCs

Maggiore Somerville
343-351 Summer Street
Somerville Massachusetts

Sample ID	PC-2 5-10'	PC-3 0-15'	PC-3 0-5'	PC-3 10-15'	PC-3 5-10'	PC-4 0-15'	PC-4 0-5'	PC-4 10-15'	PC-4 5-10'	PC-5 0-15'	PC-5 0-5'	PC-5 10-15'	PC-5 5-10'	PC-6 0-15'	PC-6 0-5'	PC-6 10-15'	PC-6 5-10'	PC-7 0-15'	PC-7 0-5'	PC-7 10-15'	PC-7 5-10'	PC-8 0-15'	MCP Method 1 Soil Standards (mg/kg) S-1 GW-2	MCP Method 1 Soil Standards (mg/kg) S-1 GW-3	MCP Reportable Concentrations RCS-1	MCP Method 3 Upper Concentration Limits (mg/kg)
Sample Date	March 28, 2017																									
Depth (feet)	5-10	0-15	0-5	10-15	5-10	0-15	0-5	10-15	5-10	0-15	0-5	10-15	5-10	0-15	0-5	10-15	5-10	0-15	0-5	10-15	5-10	0-15				
PID (ppmv)	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL				
VOLATILE ORGANIC COMPOUNDS (mg/kg)																										
Acetone	--	**0.0407**	--	--	--	**0.08**	--	--	--	**0.0375**	--	--	--	<0.011	--	--	--	**0.0242**	--	--	--	**0.0235**	50	400	6	10,000
Benzene	--	<0.00052	--	--	--	<0.00067	--	--	--	<0.00058	--	--	--	<0.00054	--	--	--	<0.00056	--	--	--	<0.00052	40	40	2	10,000
Bromobenzene	--	<0.0052	--	--	--	<0.0067	--	--	--	<0.0058	--	--	--	<0.0054	--	--	--	<0.0056	--	--	--	<0.0052	NE	NE	100	NE
Bromochloromethane	--	<0.0052	--	--	--	<0.0067	--	--	--	<0.0058	--	--	--	<0.0054	--	--	--	<0.0056	--	--	--	<0.0052	NE	NE	NE	NE
Bromodichloromethane	--	<0.0021	--	--	--	<0.0027	--	--	--	<0.0023	--	--	--	<0.0022	--	--	--	<0.0022	--	--	--	<0.0021	0.1	30	0.1	5,000
Bromoform	--	<0.0021	--	--	--	<0.0027	--	--	--	<0.0023	--	--	--	<0.0022	--	--	--	<0.0022	--	--	--	<0.0021	1	300	0.1	10,000
Bromomethane	--	<0.010	--	--	--	<0.13	--	--	--	<0.012	--	--	--	<0.011	--	--	--	<0.011	--	--	--	<0.010	0.5	30	0.5	6,000
2-Butanone (MEK)	--	<0.010	--	--	--	<0.13	--	--	--	<0.012	--	--	--	<0.011	--	--	--	<0.011	--	--	--	<0.010	50	400	4	10,000
n-Butylbenzene	--	<0.0052	--	--	--	<0.0067	--	--	--	<0.0058	--	--	--	<0.0054	--	--	--	<0.0056	--	--	--	<0.0052	NE	NE	NE	NE
sec-Butylbenzene	--	<0.0052	--	--	--	<0.0067	--	--	--	<0.0058	--	--	--	<0.0054	--	--	--	<0.0056	--	--	--	<0.0052	NE	NE	NE	NE
tert-Butylbenzene	--	<0.0052	--	--	--	<0.0067	--	--	--	<0.0058	--	--	--	<0.0054	--	--	--	<0.0056	--	--	--	<0.0052	NE	NE	100	NE
Carbon disulfide	--	<0.0052	--	--	--	<0.0067	--	--	--	<0.0058	--	--	--	<0.0054	--	--	--	<0.0056	--	--	--	<0.0052	NE	NE	100	NE
Carbon tetrachloride	--	<0.0021	--	--	--	<0.0027	--	--	--	<0.0023	--	--	--	<0.0022	--	--	--	<0.0022	--	--	--	<0.0021	5	30	5	10,000
Chlorobenzene	--	<0.0021	--	--	--	<0.0027	--	--	--	<0.0023	--	--	--	<0.0022	--	--	--	<0.0022	--	--	--	<0.0021	3	100	1	10,000
Chloroethane	--	<0.010	--	--	--	<0.13	--	--	--	<0.012	--	--	--	<0.011	--	--	--	<0.011	--	--	--	<0.010	NE	NE	100	NE
Chloroform	--	<0.0021	--	--	--	<0.0027	--	--	--	<0.0023	--	--	--	<0.0022	--	--	--	<0.0022	--	--	--	<0.0021	0.2	500	0.2	10,000
Chloromethane	--	<0.0052	--	--	--	<0.0067	--	--	--	<0.0058	--	--	--	<0.0054	--	--	--	<0.0056	--	--	--	<0.0052	NE	NE	100	NE
o-Chlorotoluene	--	<0.0052	--	--	--	<0.0067	--	--	--	<0.0058	--	--	--	<0.0054	--	--	--	<0.0056	--	--	--	<0.0052	NE	NE	100	NE
p-Chlorotoluene	--	<0.0052	--	--	--	<0.0067	--	--	--	<0.0058	--	--	--	<0.0054	--	--	--	<0.0056	--	--	--	<0.0052	NE	NE	NE	NE
Di-Isopropyl ether	--	<0.0021	--	--	--	<0.0027	--	--	--	<0.0023	--	--	--	<0.0022	--	--	--	<0.0022	--	--	--	<0.0021	NE	NE	100	NE
1,2-Dibromo-3-chloropropane	--	<0.0052	--	--	--	<0.0067	--	--	--	<0.0058	--	--	--	<0.0054	--	--	--	<0.0056	--	--	--	<0.0052	NE	NE	10	NE
Dibromochloromethane	--	<0.0052	--	--	--	<0.0067	--	--	--	<0.0058	--	--	--	<0.0054	--	--	--	<0.0056	--	--	--	<0.0052	0.03	20	0.005	5,000
1,2-Dibromoethane	--	<0.0021	--	--	--	<0.0027	--	--	--	<0.0023	--	--	--	<0.0022	--	--	--	<0.0022	--	--	--	<0.0021	0.1	1	0.1	400
1,2-Dichlorobenzene	--	<0.0021	--	--	--	<0.0027	--	--	--	<0.0023	--	--	--	<0.0022	--	--	--	<0.0022	--	--	--	<0.0021	100	300	9	10,000
1,3-Dichlorobenzene	--	<0.0021	--	--	--	<0.0027	--	--	--	<0.0023	--	--	--	<0.0022	--	--	--	<0.0022	--	--	--	<0.0021	100	100	3	5,000
1,4-Dichlorobenzene	--	<0.0021	--	--	--	<0.0027	--	--	--	<0.0023	--	--	--	<0.0022	--	--	--	<0.0022	--	--	--	<0.0021	1	80	0.7	10,000
Dichlorodifluoromethane	--	<0.0052	--	--	--	<0.0067	--	--	--	<0.0058	--	--	--	<0.0054	--	--	--	<0.0056	--	--	--	<0.0052	NE	NE	1000	NE
1,1-Dichloroethane	--	<0.0021	--	--	--	<0.0027	--	--	--	<0.0023	--	--	--	<0.0022	--	--	--	<0.0022	--	--	--	<0.0021	9	500	0.4	10,000
1,2-Dichloroethane	--	<0.0021	--	--	--	<0.0027	--	--	--	<0.0023	--	--	--	<0.0022	--	--	--	<0.0022	--	--	--	<0.0021	0.1	20	0.1	9,000
1,1-Dichloroethene	--	<0.0021	--	--	--	<0.0027	--	--	--	<0.0023	--	--	--	<0.0022	--	--	--	<0.0022	--	--	--	<0.0021	40	500	3	10,000
cis-1,2-Dichloroethene	--	<0.0021	--	--	--	<0.0027	--	--	--	<0.0023	--	--	--	<0.0022	--	--	--	<0.0022	--	--	--	<0.0021	0.1	100	0.1	5,000
trans-1,2-Dichloroethene	--	<0.0021	--	--	--	<0.0027	--	--	--	<0.0023	--	--	--	<0.0022	--	--	--	<0.0022	--	--	--	<0.0021	1	500	1	10,000
1,2-Dichloropropane	--	<0.0021	--	--	--	<0.0027	--	--	--	<0.0023	--	--	--	<0.0022	--	--	--	<0.0022	--	--	--	<0.0021	0.1	30	0.1	10,000
1,3-Dichloropropane	--	<0.0052	--	--	--	<0.0067	--	--	--	<0.0058	--	--	--	<0.0054	--	--	--	<0.0056	--	--	--	<0.0052	NE	NE	500	NE
2,2-Dichloropropane	--	<0.0052	--	--	--	<0.0067	--	--	--	<0.0058	--	--	--	<0.0054	--	--	--	<0.0056	--	--	--	<0.0052	NE	NE	NE	NE
1,1-Dichloropropene	--	<0.0052	--	--	--	<0.0067	--	--	--	<0.0058	--	--	--	<0.0054	--	--	--	<0.0056	--	--	--	<0.0052	NE	NE	NE	NE
cis-1,3-Dichloropropene	--	<0.0021	--	--	--	<0.0027	--	--	--	<0.0023	--	--	--	<0.0022	--	--	--	<0.0022	--	--	--	<0.0021	NE	NE	0.01	NE
trans-1,3-Dichloropropene	--	<0.0021	--	--	--	<0.0027	--	--	--	<0.0023	--	--	--	<0.0022	--	--	--	<0.0022	--	--	--	<0.0021	NE	NE	0.01	NE
1,4-Dioxane	--	<0.13	--	--	--	<0.17	--	--	--	<0.14	--	--	--	<0.13	--	--	--	<0.14	--	--	--	<0.13	6	20	0.2	5,000
Ethyl Ether	--	<0.0052	--	--	--	<0.0067	--	--	--	<0.0058	--	--	--	<0.0054	--	--	--	<0.0056	--	--	--	<0.0052	NE	NE	100	NE
Ethylbenzene	--	**0.0027**	--	--	--	<0.0027	--	--	--	**0.0031**	--	--	--	<0.0022	--	--	--	<0.0022	--	--	--	<0.0021	500	500	40	10,000
Hexachlorobutadiene	--	<0.0052	--	--	--	<0.0067	--	--	--	<0.0058	--	--	--	<0.0054	--	--	--	<0.0056	--	--	--	<0.0052	30	30	30	1,000
2-Hexanone	--	<0.0052	--	--	--	<0.0067	--	--	--	<0.0058	--	--	--	<0.0054	--	--	--	<0.0056	--	--	--	<0.0052	NE	NE	100	NE
Isopropylbenzene	--	<0.0052	--	--	--	<0.0067	--	--	--	<0.0058	--	--	--	<0.0054	--	--	--	<0.0056	--	--	--	<0.0052	NE	NE	1000	NE
p-Isopropyltoluene	--	<0.0052	--	--	--	<0.0067	--	--	--	<0.0058	--	--	--	<0.0054	--	--	--	<0.0056	--	--	--	<0.0052	NE	NE	100	NE
Methyl Tert Butyl Ether	--	<0.0021	--	--	--	<0.0027	--	--	--	<0.0023	--	--	--	<0.0022	--	--	--	<0.0022	--	--	--	<0.0021	100	100	0.1	5,000
4-Methyl-2-pentanone (MIBK)	--	<0.0052	--	--	--	<0.0067	--	--	--	<0.0058	--	--	--	<0.0054	--	--	--	<0.0056	--	--	--	<0.0052	50	400	0.4	10,000
Methylene bromide	--	<0.0052	--	--	--	<0.0067	--	--	--	<0.0058	--	--	--	<0.0054	--	--	--	<0.0056	--	--	--	<0.0052	NE	NE	500	NE
Methylene chloride	--	<0.0021	--	--	--	<0.0027	--	--	--	<0.0023	--	--	--	<0.0022	--	--	--	<0.0022	--	--	--	<0.0021	4	400	0.1	7,000
Napthalene	--	<0.0052	--	--	--	<0.0067	--	--	--	<0.0058	--	--	--	**0.0339**	--	--	--	<0.0056	--	--	--	<0.0052	20	500	4	10,000
n-Propylbenzene	--	<0.0052	--	--	--	<0.0067	--	--	--	<0.0058	--	--	--	<0.0054	--	--	--	<0.0056	--	--	--	<0.0052	NE	NE	100	NE
Styrene	--	<0.0052	--	--	--	<0.0067	--	--	--	<0.0058	--	--	--	<0.0054	--	--	--	<0.0056	--	--	--	<0.0052	4	70	3	10,000
tert-Amyl Methyl Ether	--	<0.0052	--	--	--	<0.0067	--	--	--	<0.0058	--	--	--	<0.0054	--	--	--	<0.0056	--	--	--	<0.0052	NE	NE	NE	NE
tert-Butyl Ethyl Ether	--	<0.0021	--	--	--	<0.0027	--	--	--	<0.0023	--	--	--	<0.0022	--	--	--	<0.0022	--	--	--	<0.0021	NE	NE	NE	NE
1,1,1,2-Tetrachloroethane	--	<0.0021	--	--	--	<0.0027	--	--	--	<0.0023	--	--	--	<0.0022	--	--	--	<0.0022	--	--	--	<0.0021	0.1	80	0.1	5,000
1,1,2,2-Tetrachloroethane	--	<0.0052	--	--	--	<0.0067	--	--	--	<0.0058	--	--	--	<0.0054	--	--	--	<0.0056	--	--	--	<0.0052	0.02	10	0.005	4,000
Tetrachloroethene	--	<0.0021	--	--	--	<0.0027	--	--	--	<0.0023	--	--	--	<0.0022	--	--	--	<0.0022	--	--	--	<0.0021	10	30	1	10,000
Tetrahydrofuran	--	<0.010	--	--	--	<0.013	--	--	--	<0.012	--	--	--	<0.011	--	--	--	<0.011	--	--	--	<0.010	NE	NE	500	NE
Toluene	--	<0.0052	--	--	--	<0.0067	--	--	--	<0.0058	--	--	--	<0.0054	--	--	--	<0.0056	--	--	--	<0.0052	500	500	30	10,000
1,2,3-Trichlorobenzene	--	<0.0052	--	--	--	<0.0067	--	--	--	<0.0058	--	--	--	<0.0054	--	--	--	<0.0056	--	--	--	<0.0052	NE	NE	NE	NE
1,2,4-Trichlorobenzene	--	<0.0052	--	--	--	<0.0067	--	--	--	<0.0058	--	--	--	<0.0054	--	--	--	<0.0056	--	--	--	<0.0052	6	700	2	10,000
1,1,1-Trichloroethane	--	<0.0021	--	--	--	<0.0027	--	--	--	<0.0023	--	--	--	<0.0022	--	--	--	<0.0022	--	--	--	<0.0021	500	500	30	10,000
1,1,2-Trichloroethane	--	<0.0021	--	--	--	<0.0027	--	--	--	<0.0023	--	--	--	<0.0022	--	--	--	<0.0022	--	--	--	<0.0021	2	40	0.1	5,000
Trichloroethene	--	<0.0021	--	--	--	<0.0027	--	--	--	<0.0023	--	--	--	<0.0022	--	--	--	<0.0022	--	--	--	<0.0021	0.3	30	0.3	600
Trichlorofluoromethane	--	<0.0021	--	--	--	<0.0027	--	--	--	<0.0023	--	--	--	<0.0022	--	--	--	<0.0022	--	--	--	<0.0021	NE	NE	1000	NE
1,2,3-Trichloropropane	--	<0.0052	--	--	--	<0.0067	--	--	--	<0.0058	--	--	--	<0.0054	--	--	--	<0.0056	--	--	--	<0.0052	NE	NE	100	NE
1,2,4-Trimethylbenzene	--	<0.0052	--	--	--	<0.0067	--	--	--	<0.0058	--	--	--	<0.0054	--	--	--	<0.0056	--	--	--	<0.0052	NE	NE	1000	NE
1,3,5-Trimethylbenzene	--	<0.0052	--	--	--	<0.0067	--	--	--	<0.0058	--	--	--	<0.0054	--	--	--	<0.0056	--	--	--	<0.0052	NE	NE	10	NE
Vinyl chloride	--	<0.010	--	--	--	<0.013	--	--	--	<0.012	--	--	--	<0.011	--	--	--	<0.011	--	--	--	<0.010	0.7	1	0.7	600
m,p-Xylene	--	**0.0144**	--	--	--	<0.0027	--	--	--	**0.0159**	--	--	--	<0.0022	--	--	--	<0.0022	--	--	--	<0.0021	100	500	100	10,000
o-Xylene	--	**0.0067**	--	--	--	<0.0027	--	--	--	**0.0066**	--	--	--	<0.0022	--	--	--	<0.0022	--	--	--	<0.0021	100	500	100	10,000
Xylene (total)	--	**0.0211**	--	--	--	<0.0027	--	--	--	**0.0225**	--	--	--	<0.0022	--	--	--	<0.0022	--	--	--	<0.0021	100	500	100	10,000

NOTES:

-- is analysis not performed	mg/kg is milligrams per kilogram	VOC is volatile organic compound
NE is not established	mg/L is milligrams per liter	<2.0 indicates not detected at or above the laboratory reporting limit of 2.0 mg/kg
ND is not detected	PID is photoionization detector	Analytes detected above the method reporting limit are in **Bold**
	ppmv is parts per million by volume	Analytes detected above MCP Reportable Concentrations are in Red

TABLE 3
SUMMARY OF SOIL ANALYTICAL DATA - VOCs

Maggiore Somerville
343-351 Summer Street
Somerville Massachusetts

Sample Date	March 28, 2017																						MCP Method 1 Soil Standards (mg/kg)		MCP Reportable Concentrations	MCP Method 3 Upper Concentration Limits (mg/kg)
Sample ID	PC-8 0-5'	PC-8 10-15'	PC-8 5-10'	PC-9 0-15'	PC-9 0-5'	PC-9 10-15'	PC-9 5-10'	PC-10 0-15'	PC-10 0-5'	PC-10 10-15'	PC-10 5-10'	PC-11 0-15'	PC-11 0-5'	PC-11 10-15'	PC-11 5-10'	PC-12 0-15'	PC-12 0-5'	PC-12 10-15'	PC-12 5-10'	PC-13 0-15	PC-13 0-5'	PC-13 10-15'	S-1		RCS-1	
Depth (feet)	0-5	10-15	5-10	0-15	0-5	10-15	5-10	0-15	0-5	10-15	5-10	0-15	0-5	10-15	5-10	0-15	0-5	10-15	5-10	0-15	0-5	10-15	GW-2	GW-3		
PID (ppmv)	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL				
VOLATILE ORGANIC COMPOUNDS (mg/kg)																										
Acetone	--	--	--	<0.0096	--	--	--	**0.044**	--	--	--	**0.0338**	--	--	--	**0.113**	--	--	--	<0.011	--	--	50	400	6	10,000
Benzene	--	--	--	<0.00048	--	--	--	<0.00053	--	--	--	<0.00060	--	--	--	<0.00057	--	--	--	<0.00057	--	--	40	40	2	10,000
Bromobenzene	--	--	--	<0.0048	--	--	--	<0.0053	--	--	--	<0.0060	--	--	--	<0.0057	--	--	--	<0.0057	--	--	NE	NE	100	NE
Bromochloromethane	--	--	--	<0.0048	--	--	--	<0.0053	--	--	--	<0.0060	--	--	--	<0.0057	--	--	--	<0.0057	--	--	NE	NE	NE	NE
Bromodichloromethane	--	--	--	<0.0019	--	--	--	<0.0021	--	--	--	<0.0024	--	--	--	<0.0023	--	--	--	<0.0023	--	--	0.1	30	0.1	5,000
Bromoform	--	--	--	<0.0019	--	--	--	<0.0021	--	--	--	<0.0024	--	--	--	<0.0023	--	--	--	<0.0023	--	--	1	300	0.1	10,000
Bromomethane	--	--	--	<0.0096	--	--	--	<0.011	--	--	--	<0.012	--	--	--	<0.011	--	--	--	<0.011	--	--	0.5	30	0.5	6,000
2-Butanone (MEK)	--	--	--	<0.0096	--	--	--	<0.011	--	--	--	<0.012	--	--	--	<0.011	--	--	--	<0.011	--	--	50	400	4	10,000
n-Butylbenzene	--	--	--	<0.0048	--	--	--	<0.0053	--	--	--	<0.0060	--	--	--	<0.0057	--	--	--	<0.0057	--	--	NE	NE	NE	NE
sec-Butylbenzene	--	--	--	<0.0048	--	--	--	<0.0053	--	--	--	<0.0060	--	--	--	<0.0057	--	--	--	<0.0057	--	--	NE	NE	NE	NE
tert-Butylbenzene	--	--	--	<0.0048	--	--	--	<0.0053	--	--	--	<0.0060	--	--	--	<0.0057	--	--	--	<0.0057	--	--	NE	NE	100	NE
Carbon disulfide	--	--	--	<0.0048	--	--	--	<0.0053	--	--	--	<0.0060	--	--	--	<0.0057	--	--	--	<0.0057	--	--	NE	NE	100	NE
Carbon tetrachloride	--	--	--	<0.0019	--	--	--	<0.0021	--	--	--	<0.0024	--	--	--	<0.0023	--	--	--	<0.0023	--	--	5	30	5	10,000
Chlorobenzene	--	--	--	<0.0019	--	--	--	<0.0021	--	--	--	<0.0024	--	--	--	<0.0023	--	--	--	<0.0023	--	--	3	100	1	10,000
Chloroethane	--	--	--	<0.0096	--	--	--	<0.011	--	--	--	<0.012	--	--	--	<0.011	--	--	--	<0.011	--	--	NE	NE	100	NE
Chloroform	--	--	--	<0.0019	--	--	--	<0.0021	--	--	--	<0.0024	--	--	--	<0.0023	--	--	--	<0.0023	--	--	0.2	500	0.2	10,000
Chloromethane	--	--	--	<0.0048	--	--	--	<0.0053	--	--	--	<0.0060	--	--	--	<0.0057	--	--	--	<0.0057	--	--	NE	NE	100	NE
o-Chlorotoluene	--	--	--	<0.0048	--	--	--	<0.0053	--	--	--	<0.0060	--	--	--	<0.0057	--	--	--	<0.0057	--	--	NE	NE	100	NE
p-Chlorotoluene	--	--	--	<0.0048	--	--	--	<0.0053	--	--	--	<0.0060	--	--	--	<0.0057	--	--	--	<0.0057	--	--	NE	NE	NE	NE
Di-Isopropyl ether	--	--	--	<0.0019	--	--	--	<0.0021	--	--	--	<0.0024	--	--	--	<0.0023	--	--	--	<0.0023	--	--	NE	NE	100	NE
1,2-Dibromo-3-chloropropane	--	--	--	<0.0048	--	--	--	<0.0053	--	--	--	<0.0060	--	--	--	<0.0057	--	--	--	<0.0057	--	--	NE	NE	10	NE
Dibromochloromethane	--	--	--	<0.0048	--	--	--	<0.0053	--	--	--	<0.0060	--	--	--	<0.0057	--	--	--	<0.0057	--	--	0.03	20	0.005	5,000
1,2-Dibromoethane	--	--	--	<0.0019	--	--	--	<0.0021	--	--	--	<0.0024	--	--	--	<0.0023	--	--	--	<0.0023	--	--	0.1	1	0.1	400
1,2-Dichlorobenzene	--	--	--	<0.0019	--	--	--	<0.0021	--	--	--	<0.0024	--	--	--	<0.0023	--	--	--	<0.0023	--	--	100	300	9	10,000
1,3-Dichlorobenzene	--	--	--	<0.0019	--	--	--	<0.0021	--	--	--	<0.0024	--	--	--	<0.0023	--	--	--	<0.0023	--	--	100	100	3	5,000
1,4-Dichlorobenzene	--	--	--	<0.0019	--	--	--	<0.0021	--	--	--	<0.0024	--	--	--	<0.0023	--	--	--	<0.0023	--	--	1	80	0.7	10,000
Dichlorodifluoromethane	--	--	--	<0.0048	--	--	--	<0.0053	--	--	--	<0.0060	--	--	--	<0.0057	--	--	--	<0.0057	--	--	NE	NE	1000	NE
1,1-Dichloroethane	--	--	--	<0.0019	--	--	--	<0.0021	--	--	--	<0.0024	--	--	--	<0.0023	--	--	--	<0.0023	--	--	9	500	0.4	10,000
1,2-Dichloroethane	--	--	--	<0.0019	--	--	--	<0.0021	--	--	--	<0.0024	--	--	--	<0.0023	--	--	--	<0.0023	--	--	0.1	20	0.1	9,000
1,1-Dichloroethene	--	--	--	<0.0019	--	--	--	<0.0021	--	--	--	<0.0024	--	--	--	<0.0023	--	--	--	<0.0023	--	--	40	500	3	10,000
cis-1,2-Dichloroethene	--	--	--	<0.0019	--	--	--	<0.0021	--	--	--	<0.0024	--	--	--	<0.0023	--	--	--	<0.0023	--	--	0.1	100	0.1	5,000
trans-1,2-Dichloroethene	--	--	--	<0.0019	--	--	--	<0.0021	--	--	--	<0.0024	--	--	--	<0.0023	--	--	--	<0.0023	--	--	1	500	1	10,000
1,2-Dichloropropane	--	--	--	<0.0019	--	--	--	<0.0021	--	--	--	<0.0024	--	--	--	<0.0023	--	--	--	<0.0023	--	--	0.1	30	0.1	10,000
1,3-Dichloropropane	--	--	--	<0.0048	--	--	--	<0.0053	--	--	--	<0.0060	--	--	--	<0.0057	--	--	--	<0.0057	--	--	NE	NE	500	NE
2,2-Dichloropropane	--	--	--	<0.0048	--	--	--	<0.0053	--	--	--	<0.0060	--	--	--	<0.0057	--	--	--	<0.0057	--	--	NE	NE	NE	NE
1,1-Dichloropropene	--	--	--	<0.0048	--	--	--	<0.0053	--	--	--	<0.0060	--	--	--	<0.0057	--	--	--	<0.0057	--	--	NE	NE	NE	NE
cis-1,3-Dichloropropene	--	--	--	<0.0019	--	--	--	<0.0021	--	--	--	<0.0024	--	--	--	<0.0023	--	--	--	<0.0023	--	--	NE	NE	0.01	NE
trans-1,3-Dichloropropene	--	--	--	<0.0019	--	--	--	<0.0021	--	--	--	<0.0024	--	--	--	<0.0023	--	--	--	<0.0023	--	--	NE	NE	0.01	NE
1,4-Dioxane	--	--	--	<0.12	--	--	--	<0.13	--	--	--	<0.15	--	--	--	<0.14	--	--	--	<0.14	--	--	6	20	0.2	5,000
Ethyl Ether	--	--	--	<0.0048	--	--	--	<0.0053	--	--	--	<0.0060	--	--	--	<0.0057	--	--	--	<0.0057	--	--	NE	NE	100	NE
Ethylbenzene	--	--	--	<0.0019	--	--	--	<0.0021	--	--	--	<0.0024	--	--	--	<0.0023	--	--	--	<0.0023	--	--	500	500	40	10,000
Hexachlorobutadiene	--	--	--	<0.0048	--	--	--	<0.0053	--	--	--	<0.0060	--	--	--	<0.0057	--	--	--	<0.0057	--	--	30	30	30	1,000
2-Hexanone	--	--	--	<0.0048	--	--	--	<0.0053	--	--	--	<0.0060	--	--	--	<0.0057	--	--	--	<0.0057	--	--	NE	NE	100	NE
Isopropylbenzene	--	--	--	<0.0048	--	--	--	<0.0053	--	--	--	<0.0060	--	--	--	<0.0057	--	--	--	<0.0057	--	--	NE	NE	1000	NE
p-Isopropyltoluene	--	--	--	<0.0048	--	--	--	<0.0053	--	--	--	<0.0060	--	--	--	<0.0057	--	--	--	<0.0057	--	--	NE	NE	100	NE
Methyl Tert Butyl Ether	--	--	--	<0.0019	--	--	--	<0.0021	--	--	--	<0.0024	--	--	--	<0.0023	--	--	--	<0.0023	--	--	100	100	0.1	5,000
4-Methyl-2-pentanone (MIBK)	--	--	--	<0.0048	--	--	--	<0.0053	--	--	--	<0.0060	--	--	--	<0.0057	--	--	--	<0.0057	--	--	50	400	0.4	10,000
Methylene bromide	--	--	--	<0.0048	--	--	--	<0.0053	--	--	--	<0.0060	--	--	--	<0.0057	--	--	--	<0.0057	--	--	NE	NE	500	NE
Methylene chloride	--	--	--	<0.0019	--	--	--	<0.0021	--	--	--	<0.0024	--	--	--	<0.0023	--	--	--	<0.0023	--	--	4	400	0.1	7,000
Naphthalene	--	--	--	<0.0048	--	--	--	<0.0053	--	--	--	<0.0060	--	--	--	<0.0057	--	--	--	<0.0057	--	--	20	500	4	10,000
n-Propylbenzene	--	--	--	<0.0048	--	--	--	<0.0053	--	--	--	<0.0060	--	--	--	<0.0057	--	--	--	<0.0057	--	--	NE	NE	100	NE
Styrene	--	--	--	<0.0048	--	--	--	<0.0053	--	--	--	<0.0060	--	--	--	<0.0057	--	--	--	<0.0057	--	--	4	70	3	10,000
tert-Amyl Methyl Ether	--	--	--	<0.0048	--	--	--	<0.0053	--	--	--	<0.0060	--	--	--	<0.0057	--	--	--	<0.0057	--	--	NE	NE	NE	NE
tert-Butyl Ethyl Ether	--	--	--	<0.0019	--	--	--	<0.0021	--	--	--	<0.0024	--	--	--	<0.0023	--	--	--	<0.0023	--	--	NE	NE	NE	NE
1,1,1,2-Tetrachloroethane	--	--	--	<0.0019	--	--	--	<0.0021	--	--	--	<0.0024	--	--	--	<0.0023	--	--	--	<0.0023	--	--	0.1	80	0.1	5,000
1,1,2,2-Tetrachloroethane	--	--	--	<0.0048	--	--	--	<0.0053	--	--	--	<0.0060	--	--	--	<0.0057	--	--	--	<0.0057	--	--	0.02	10	0.005	4,000
Tetrachloroethene	--	--	--	<0.0019	--	--	--	<0.0021	--	--	--	<0.0024	--	--	--	<0.0023	--	--	--	<0.0023	--	--	10	30	1	10,000
Tetrahydrofuran	--	--	--	<0.0096	--	--	--	<0.011	--	--	--	<0.012	--	--	--	<0.011	--	--	--	<0.011	--	--	NE	NE	500	NE
Toluene	--	--	--	<0.0048	--	--	--	<0.0053	--	--	--	<0.0060	--	--	--	<0.0057	--	--	--	<0.0057	--	--	500	500	30	10,000
1,2,3-Trichlorobenzene	--	--	--	<0.0048	--	--	--	<0.0053	--	--	--	<0.0060	--	--	--	<0.0057	--	--	--	<0.0057	--	--	NE	NE	NE	NE
1,2,4-Trichlorobenzene	--	--	--	<0.0048	--	--	--	<0.0053	--	--	--	<0.0060	--	--	--	<0.0057	--	--	--	<0.0057	--	--	6	700	2	10,000
1,1,1-Trichloroethane	--	--	--	<0.0019	--	--	--	<0.0021	--	--	--	<0.0024	--	--	--	<0.0023	--	--	--	<0.0023	--	--	500	500	30	10,000
1,1,2-Trichloroethane	--	--	--	<0.0019	--	--	--	<0.0021	--	--	--	<0.0024	--	--	--	<0.0023	--	--	--	<0.0023	--	--	2	40	0.1	5,000
Trichloroethene	--	--	--	<0.0019	--	--	--	<0.0021	--	--	--	<0.0024	--	--	--	<0.0023	--	--	--	<0.0023	--	--	0.3	30	0.3	600
Trichlorofluoromethane	--	--	--	<0.0019	--	--	--	<0.0021	--	--	--	<0.0024	--	--	--	<0.0023	--	--	--	<0.0023	--	--	NE	NE	1000	NE
1,2,3-Trichloropropane	--	--	--	<0.0048	--	--	--	<0.0053	--	--	--	<0.0060	--	--	--	<0.0057	--	--	--	<0.0057	--	--	NE	NE	100	NE
1,2,4-Trimethylbenzene	--	--	--	<0.0048	--	--	--	<0.0053	--	--	--	<0.0060	--	--	--	<0.0057	--	--	--	<0.0057	--	--	NE	NE	1000	NE
1,3,5-Trimethylbenzene	--	--	--	<0.0048	--	--	--	<0.0053	--	--	--	<0.0060	--	--	--	<0.0057	--	--	--	<0.0057	--	--	NE	NE	10	NE
Vinyl chloride	--	--	--	<0.0096	--	--	--	<0.011	--	--	--	<0.012	--	--	--	<0.011	--	--	--	<0.011	--	--	0.7	1	0.7	600
m,p-Xylene	--	--	--	<0.0019	--	--	--	<0.0021	--	--	--	<0.0024	--	--	--	<0.0023	--	--	--	**0.0039**	--	--	100	500	100	10,000
o-Xylene	--	--	--	<0.0019	--	--	--	<0.0021	--	--	--	<0.0024	--	--	--	<0.0023	--	--	--	<0.0023	--	--	100	500	100	10,000
Xylene (total)	--	--	--	<0.0019	--	--	--	<0.0021	--	--	--	<0.0024	--	--	--	<0.0023	--	--	--	**0.0055**	--	--	100	500	100	10,000

NOTES

-- is analysis not performed	mg/kg is milligrams per kilogram	VOC is volatile organic compound
NE is not established	mg/L is milligrams per liter	<2.0 indicates not detected at or above the laboratory reporting limit of 2.0 mg/kg
ND is not detected	PID is photoionization detector	Analytes detected above the method reporting limit are in **Bold**
	ppmv is parts per million by volume	Analytes detected above MCP Reportable Concentrations are in Red

TABLE 3
SUMMARY OF SOIL ANALYTICAL DATA - VOCs

Maggiore Somerville
343-351 Summer Street
Somerville, Massachusetts

Sample Date	March 28, 2017																									MCP Method 1 Soil Standards (mg/kg)		MCP Reportable Concentrations	MCP Method 3 Upper Concentrati
Sample ID	PC-13 5-10'	PC-14 0-15'	PC-14 0-5'	PC-14 10-	PC-14 5-10'	PC-15 0-15'	PC-15 0-5'	PC-15 10-15'	PC-15 5-10'	PC-16 0-5'	PC-16A 0-5'	PC-16B 0-5'	PC-16C 0-5'	PC-17 0-5'	PC-17A 0-5'	PC-17B 0-5'	PC-17C 0-5'	PC-18 0-5'	PC-18A 0-5'	PC-18B 0-5'	PC-18C 0-5'	PC-19 0-5'	PC-19A 0-5'	PC-19B 0-5'	PC-19C 0-5'	S-1		RCS-1	
Depth (feet)	5-10	0-15	0-5	10-15	5-10	0-15	0-5	10-15	5-10	0-5	0-5	0-5	0-5	0-5	0-5	0-5	0-5	0-5	0-5	0-5	0-5	0-5	0-5	0-5	0-5	GW-2	GW-3		
PID (ppmv)	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL				
VOLATILE ORGANIC COMPOUNDS (mg/kg)																													
Acetone	--	**0.0377**	--	--	--	<0.013	--	--	--	**0.0587**	--	--	--	**0.0686**	--	--	--	<0.011	--	--	--	<0.0088	--	--	--	50	400	6	10,000
Benzene	--	<0.00057	--	--	--	<0.00067	--	--	--	<0.00061	--	--	--	<0.00058	--	--	--	<0.00055	--	--	--	<0.00044	--	--	--	40	40	2	10,000
Bromobenzene	--	<0.0057	--	--	--	<0.0067	--	--	--	<0.0061	--	--	--	<0.0058	--	--	--	<0.0055	--	--	--	<0.0044	--	--	--	NE	NE	100	NE
Bromochloromethane	--	<0.0057	--	--	--	<0.0067	--	--	--	<0.0061	--	--	--	<0.0058	--	--	--	<0.0055	--	--	--	<0.0044	--	--	--	NE	NE	NE	NE
Bromodichloromethane	--	<0.0023	--	--	--	<0.0027	--	--	--	<0.0025	--	--	--	<0.0023	--	--	--	<0.0022	--	--	--	<0.0018	--	--	--	0.1	30	0.1	5,000
Bromoform	--	<0.0023	--	--	--	<0.0027	--	--	--	<0.0025	--	--	--	<0.0023	--	--	--	<0.0022	--	--	--	<0.0018	--	--	--	1	300	0.1	10,000
Bromomethane	--	<0.011	--	--	--	<0.013	--	--	--	<0.012	--	--	--	<0.012	--	--	--	<0.011	--	--	--	<0.0088	--	--	--	0.5	30	0.5	6,000
2-Butanone (MEK)	--	<0.011	--	--	--	<0.013	--	--	--	<0.012	--	--	--	<0.012	--	--	--	<0.011	--	--	--	<0.0088	--	--	--	50	400	4	10,000
n-Butylbenzene	--	<0.0057	--	--	--	<0.0067	--	--	--	<0.0061	--	--	--	<0.0058	--	--	--	<0.0055	--	--	--	<0.0044	--	--	--	NE	NE	NE	NE
sec-Butylbenzene	--	<0.0057	--	--	--	<0.0067	--	--	--	<0.0061	--	--	--	<0.0058	--	--	--	<0.0055	--	--	--	<0.0044	--	--	--	NE	NE	NE	NE
tert-Butylbenzene	--	<0.0057	--	--	--	<0.0067	--	--	--	<0.0061	--	--	--	<0.0058	--	--	--	<0.0055	--	--	--	<0.0044	--	--	--	NE	NE	100	NE
Carbon disulfide	--	<0.0057	--	--	--	<0.0067	--	--	--	<0.0061	--	--	--	<0.0058	--	--	--	<0.0055	--	--	--	<0.0044	--	--	--	NE	NE	100	NE
Carbon tetrachloride	--	<0.0023	--	--	--	<0.0027	--	--	--	<0.0025	--	--	--	<0.0023	--	--	--	<0.0022	--	--	--	<0.0018	--	--	--	5	30	5	10,000
Chlorobenzene	--	<0.0023	--	--	--	<0.0027	--	--	--	<0.0025	--	--	--	<0.0023	--	--	--	<0.0022	--	--	--	<0.0018	--	--	--	3	100	1	10,000
Chloroethane	--	<0.011	--	--	--	<0.013	--	--	--	<0.012	--	--	--	<0.012	--	--	--	<0.011	--	--	--	<0.0088	--	--	--	NE	NE	100	NE
Chloroform	--	<0.0023	--	--	--	<0.0027	--	--	--	<0.0025	--	--	--	<0.0023	--	--	--	<0.0022	--	--	--	<0.0018	--	--	--	0.2	500	0.2	10,000
Chloromethane	--	<0.0057	--	--	--	<0.0067	--	--	--	<0.0061	--	--	--	<0.0058	--	--	--	<0.0055	--	--	--	<0.0044	--	--	--	NE	NE	100	NE
o-Chlorotoluene	--	<0.0057	--	--	--	<0.0067	--	--	--	<0.0061	--	--	--	<0.0058	--	--	--	<0.0055	--	--	--	<0.0044	--	--	--	NE	NE	100	NE
p-Chlorotoluene	--	<0.0057	--	--	--	<0.0067	--	--	--	<0.0061	--	--	--	<0.0058	--	--	--	<0.0055	--	--	--	<0.0044	--	--	--	NE	NE	NE	NE
Di-Isopropyl ether	--	<0.0023	--	--	--	<0.0027	--	--	--	<0.0025	--	--	--	<0.0023	--	--	--	<0.0022	--	--	--	<0.0018	--	--	--	NE	NE	100	NE
1,2-Dibromo-3-chloropropane	--	<0.0057	--	--	--	<0.0067	--	--	--	<0.0061	--	--	--	<0.0058	--	--	--	<0.0055	--	--	--	<0.0044	--	--	--	NE	NE	10	NE
Dibromochloromethane	--	<0.0057	--	--	--	<0.0067	--	--	--	<0.0025	--	--	--	<0.0023	--	--	--	<0.0055	--	--	--	<0.0018	--	--	--	0.03	20	0.005	5,000
1,2-Dibromoethane	--	<0.0023	--	--	--	<0.0027	--	--	--	<0.0025	--	--	--	<0.0023	--	--	--	<0.0022	--	--	--	<0.0018	--	--	--	0.1	1	0.1	400
1,2-Dichlorobenzene	--	<0.0023	--	--	--	<0.0027	--	--	--	<0.0025	--	--	--	<0.0023	--	--	--	<0.0022	--	--	--	<0.0018	--	--	--	100	300	9	10,000
1,3-Dichlorobenzene	--	<0.0023	--	--	--	<0.0027	--	--	--	<0.0025	--	--	--	<0.0023	--	--	--	<0.0022	--	--	--	<0.0018	--	--	--	100	100	3	5,000
1,4-Dichlorobenzene	--	<0.0023	--	--	--	<0.0027	--	--	--	<0.0025	--	--	--	<0.0023	--	--	--	<0.0022	--	--	--	<0.0018	--	--	--	1	80	0.7	10,000
Dichlorodifluoromethane	--	<0.0057	--	--	--	<0.0067	--	--	--	<0.0061	--	--	--	<0.0058	--	--	--	<0.0055	--	--	--	<0.0044	--	--	--	NE	NE	1000	NE
1,1-Dichloroethane	--	<0.0023	--	--	--	<0.0027	--	--	--	<0.0025	--	--	--	<0.0023	--	--	--	<0.0022	--	--	--	<0.0018	--	--	--	9	500	0.4	10,000
1,2-Dichloroethane	--	<0.0023	--	--	--	<0.0027	--	--	--	<0.0025	--	--	--	<0.0023	--	--	--	<0.0022	--	--	--	<0.0018	--	--	--	0.1	20	0.1	9,000
1,1-Dichloroethene	--	<0.0023	--	--	--	<0.0027	--	--	--	<0.0025	--	--	--	<0.0023	--	--	--	<0.0022	--	--	--	<0.0018	--	--	--	40	500	3	10,000
cis-1,2-Dichloroethene	--	<0.0023	--	--	--	<0.0027	--	--	--	<0.0025	--	--	--	<0.0023	--	--	--	<0.0022	--	--	--	<0.0018	--	--	--	0.1	100	0.1	5,000
trans-1,2-Dichloroethene	--	<0.0023	--	--	--	<0.0027	--	--	--	<0.0025	--	--	--	<0.0023	--	--	--	<0.0022	--	--	--	<0.0018	--	--	--	1	500	1	10,000
1,2-Dichloropropane	--	<0.0023	--	--	--	<0.0027	--	--	--	<0.0025	--	--	--	<0.0023	--	--	--	<0.0022	--	--	--	<0.0018	--	--	--	0.1	30	0.1	10,000
1,3-Dichloropropane	--	<0.0057	--	--	--	<0.0067	--	--	--	<0.0061	--	--	--	<0.0058	--	--	--	<0.0055	--	--	--	<0.0044	--	--	--	NE	NE	500	NE
2,2-Dichloropropane	--	<0.0057	--	--	--	<0.0067	--	--	--	<0.0061	--	--	--	<0.0058	--	--	--	<0.0055	--	--	--	<0.0044	--	--	--	NE	NE	NE	NE
1,1-Dichloropropene	--	<0.0057	--	--	--	<0.0067	--	--	--	<0.0061	--	--	--	<0.0058	--	--	--	<0.0055	--	--	--	<0.0044	--	--	--	NE	NE	NE	NE
cis-1,3-Dichloropropene	--	<0.0023	--	--	--	<0.0027	--	--	--	<0.0025	--	--	--	<0.0023	--	--	--	<0.0022	--	--	--	<0.0018	--	--	--	NE	NE	0.01	NE
trans-1,3-Dichloropropene	--	<0.0023	--	--	--	<0.0027	--	--	--	<0.0025	--	--	--	<0.0023	--	--	--	<0.0022	--	--	--	<0.0018	--	--	--	NE	NE	0.01	NE
1,4-Dioxane	--	<0.14	--	--	--	<0.17	--	--	--	<0.15	--	--	--	<0.14	--	--	--	<0.14	--	--	--	<0.011	--	--	--	6	20	0.2	5,000
Ethyl Ether	--	<0.0057	--	--	--	<0.0067	--	--	--	<0.0061	--	--	--	<0.0058	--	--	--	<0.0055	--	--	--	<0.0044	--	--	--	NE	NE	100	NE
Ethylbenzene	--	<0.0023	--	--	--	<0.0027	--	--	--	**0.024**	--	--	--	<0.0023	--	--	--	<0.0022	--	--	--	<0.0018	--	--	--	500	500	40	10,000
Hexachlorobutadiene	--	<0.0057	--	--	--	<0.0067	--	--	--	<0.0061	--	--	--	<0.0058	--	--	--	<0.0055	--	--	--	<0.0044	--	--	--	30	30	30	1,000
2-Hexanone	--	<0.0057	--	--	--	<0.0067	--	--	--	<0.0061	--	--	--	<0.0058	--	--	--	<0.0055	--	--	--	<0.0044	--	--	--	NE	NE	100	NE
Isopropylbenzene	--	<0.0057	--	--	--	<0.0067	--	--	--	<0.0061	--	--	--	<0.0058	--	--	--	<0.0055	--	--	--	<0.0044	--	--	--	NE	NE	1000	NE
p-Isopropyltoluene	--	<0.0057	--	--	--	<0.0067	--	--	--	<0.0061	--	--	--	<0.0058	--	--	--	<0.0055	--	--	--	<0.0044	--	--	--	NE	NE	100	NE
Methyl Tert Butyl Ether	--	<0.0023	--	--	--	<0.0027	--	--	--	<0.0025	--	--	--	<0.0023	--	--	--	<0.0022	--	--	--	<0.0018	--	--	--	100	100	0.1	5,000
4-Methyl-2-pentanone (MIBK)	--	<0.0057	--	--	--	<0.0067	--	--	--	<0.0061	--	--	--	<0.0058	--	--	--	<0.0055	--	--	--	<0.0044	--	--	--	50	400	0.4	10,000
Methylene bromide	--	<0.0057	--	--	--	<0.0067	--	--	--	<0.0061	--	--	--	<0.0058	--	--	--	<0.0055	--	--	--	<0.0044	--	--	--	NE	NE	500	NE
Methylene chloride	--	<0.0023	--	--	--	<0.0027	--	--	--	<0.0025	--	--	--	<0.0023	--	--	--	<0.0022	--	--	--	<0.0018	--	--	--	4	400	0.1	7,000
Naphthalene	--	<0.0057	--	--	--	<0.0067	--	--	--	<0.0061	--	--	--	**0.0117**	--	--	--	**0.0093**	--	--	--	**0.0085**	--	--	--	20	500	4	10,000
n-Propylbenzene	--	<0.0057	--	--	--	<0.0067	--	--	--	<0.0061	--	--	--	<0.0058	--	--	--	<0.0055	--	--	--	<0.0044	--	--	--	NE	NE	100	NE
Styrene	--	<0.0057	--	--	--	<0.0067	--	--	--	<0.0061	--	--	--	<0.0058	--	--	--	<0.0055	--	--	--	<0.0044	--	--	--	4	70	3	10,000
tert-Amyl Methyl Ether	--	<0.0057	--	--	--	<0.0067	--	--	--	<0.0061	--	--	--	<0.0058	--	--	--	<0.0055	--	--	--	<0.0044	--	--	--	NE	NE	NE	NE
tert-Butyl Ethyl Ether	--	<0.0023	--	--	--	<0.0027	--	--	--	<0.0025	--	--	--	<0.0023	--	--	--	<0.0022	--	--	--	<0.0018	--	--	--	NE	NE	NE	NE
1,1,1,2-Tetrachloroethane	--	<0.0023	--	--	--	<0.0027	--	--	--	<0.0025	--	--	--	<0.0023	--	--	--	<0.0022	--	--	--	<0.0018	--	--	--	0.1	80	0.1	5,000
1,1,2,2-Tetrachloroethane	--	<0.0057	--	--	--	<0.0067	--	--	--	<0.0061	--	--	--	<0.0058	--	--	--	<0.0055	--	--	--	<0.0044	--	--	--	0.02	10	0.005	4,000
Tetrachloroethene	--	<0.0023	--	--	--	<0.0027	--	--	--	<0.0025	--	--	--	<0.0023	--	--	--	<0.0022	--	--	--	<0.0018	--	--	--	10	30	1	10,000
Tetrahydrofuran	--	<0.011	--	--	--	<0.013	--	--	--	<0.012	--	--	--	<0.012	--	--	--	<0.011	--	--	--	<0.0088	--	--	--	NE	NE	500	NE
Toluene	--	<0.0057	--	--	--	<0.0067	--	--	--	<0.0061	--	--	--	<0.0058	--	--	--	<0.0055	--	--	--	<0.0044	--	--	--	500	500	30	10,000
1,2,3-Trichlorobenzene	--	<0.0057	--	--	--	<0.0067	--	--	--	<0.0061	--	--	--	<0.0058	--	--	--	<0.0055	--	--	--	<0.0044	--	--	--	NE	NE	NE	NE
1,2,4-Trichlorobenzene	--	<0.0057	--	--	--	<0.0067	--	--	--	<0.0061	--	--	--	<0.0058	--	--	--	<0.0055	--	--	--	<0.0044	--	--	--	6	700	2	10,000
1,1,1-Trichloroethane	--	<0.0023	--	--	--	<0.0027	--	--	--	<0.0025	--	--	--	<0.0023	--	--	--	<0.0022	--	--	--	<0.0018	--	--	--	500	500	30	10,000
1,1,2-Trichloroethane	--	<0.0023	--	--	--	<0.0027	--	--	--	<0.0025	--	--	--	<0.0023	--	--	--	<0.0022	--	--	--	<0.0018	--	--	--	2	40	0.1	5,000
Trichloroethene	--	<0.0023	--	--	--	<0.0027	--	--	--	<0.0025	--	--	--	<0.0023	--	--	--	<0.0022	--	--	--	<0.0018	--	--	--	0.3	30	0.3	600
Trichlorofluoromethane	--	<0.0023	--	--	--	<0.0027	--	--	--	<0.0025	--	--	--	<0.0023	--	--	--	<0.0022	--	--	--	<0.0018	--	--	--	NE	NE	1000	NE
1,2,3-Trichloropropane	--	<0.0057	--	--	--	<0.0067	--	--	--	<0.0061	--	--	--	<0.0058	--	--	--	<0.0055	--	--	--	<0.0044	--	--	--	NE	NE	100	NE
1,2,4-Trimethylbenzene	--	<0.0057	--	--	--	<0.0067	--	--	--	<0.0061	--	--	--	<0.0058	--	--	--	<0.0055	--	--	--	<0.0044	--	--	--	NE	NE	1000	NE
1,3,5-Trimethylbenzene	--	<0.0057	--	--	--	<0.0067	--	--	--	<0.0061	--	--	--	<0.0058	--	--	--	<0.0055	--	--	--	<0.0044	--	--	--	NE	NE	10	NE
Vinyl chloride	--	<0.011	--	--	--	<0.013	--	--	--	<0.012	--	--	--	<0.012	--	--	--	<0.011	--	--	--	<0.0088	--	--	--	0.7	1	0.7	600
m,p-Xylene	--	**0.0063**	--	--	--	**0.0045**	--	--	--	**0.121**	--	--	--	<0.0023	--	--	--	<0.0022	--	--	--	<0.0018	--	--	--	100	500	100	10,000
o-Xylene	--	**0.0026**	--	--	--	<0.0027	--	--	--	**0.0344**	--	--	--	<0.0023	--	--	--	<0.0022	--	--	--	<0.0018	--	--	--	100	500	100	10,000
Xylene (total)	--	**0.0089**	--	--	--	**0.0063**	--	--	--	**0.155**	--	--	--	<0.0023	--	--	--	<0.0022	--	--	--	<0.0018	--	--	--	100	500	100	10,000

NOTES

-- is analysis not performed
NE is not established
ND is not detected

mg/kg is milligrams per kilogram
mg/L is milligrams per liter
PID is photoionization detector
ppmv is parts per million by volume

VOC is volatile organic compound
<2.0 indicates not detected at or above the laboratory reporting limit of 2.0 mg/kg
Analytes detected above the method reporting limit are in **Bold**
Analytes detected above MCP Reportable Concentrations are in Red

TABLE 4
SUMMARY OF SOIL ANALYTICAL DATA - EPH, VPH

Maggiore Somerville
343-351 Summer Street
Somerville, Massachusetts

Sample Date	August 8, 2016								August 12, 2016			**MCP Method 1 Soil Standards (mg/kg)**		**MCP Reportable Concentrations (mg/kg)**	**MCP Method 3 Upper Concentration Limits (mg/kg)**
Sample ID	B-101	B-102	B-103	B-104	MW-105	MW-106	MW-107	MW-108	S-1	S-2	S-3	S-1		RCS-1	
Depth (feet)	0-10	0-10	13	0-10	13.5	9	13	13.5	8-9	8	8.5	GW-2	GW-3		
PID (ppmv)	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL				
EXTRACTABLE PETROLEUM HYDROCARBONS (mg/kg)															
C9-C18 Aliphatics	<9.3	<11	<12	<9.2	<11	<9.7	<11	<11	<8.8	<9.5	**11.7**	1,000	1,000	1,000	20,000
C19-C36 Aliphatics	<19	<23	<23	**21.4**	<21	<19	<22	<22	**76.6**	<19	**95.3**	3,000	3,000	3,000	20,000
C11-C22 Aromatics	**26.7**	<23	<23	**63.3**	<21	<19	<22	<22	**142**	<19	**655**	1,000	1,000	1,000	10,000
Acenaphthene	<0.46	<0.57	<0.58	**0.5**	<0.54	<0.49	<0.55	<0.54	**0.6**	<0.47	**1.7**	1,000	1,000	4	10,000
Acenaphthylene	<0.46	<0.57	<0.58	<0.46	<0.54	<0.49	<0.55	<0.54	<0.44	<0.47	**2.5**	600	10	1	10,000
Anthracene	<0.46	<0.57	<0.58	**1.1**	<0.54	<0.49	<0.55	<0.54	**1.7**	<0.47	**11.9**	1,000	1,000	1,000	10,000
Benzo(a)anthracene	**0.8**	**1.2**	<0.58	**3.1**	<0.54	<0.49	<0.55	<0.54	**5.2**	<0.47	**28.1**	7	7	7	3,000
Benzo(a)pyrene	**1.3**	**1.0**	<0.58	**2.7**	<0.54	<0.49	<0.55	<0.54	**4.8**	<0.47	**19.2**	2	2	2	300
Benzo(b)fluoranthene	**2.2**	**1.93**	<0.58	**4.7**	<0.54	<0.49	<0.55	<0.54	**4.5**	<0.47	**28.2**	7	7	7	3,000
Benzo(g,h,i)perylene	**1.0**	**0.6**	<0.58	**1.5**	<0.54	<0.49	<0.55	<0.54	**2.9**	<0.47	**9.6**	1,000	1,000	1,000	10,000
Benzo(k)fluoranthene	<0.46	**1.6**	<0.58	<0.46	<0.54	<0.49	<0.55	<0.54	**3.9**	<0.47	**10.8**	70	70	70	10,000
Chrysene	**0.7**	**1.1**	<0.58	**2.7**	<0.54	<0.49	<0.55	<0.54	**5.0**	<0.47	**23.6**	70	70	70	10,000
Dibenz(a.h)anthracene	<0.46	<0.57	<0.58	<0.46	<0.54	<0.49	<0.55	<0.54	**1.0**	<0.47	**3.8**	0.7	0.7	0.7	300
Fluoranthene	**1.1**	**1.7**	<0.58	**6.6**	<0.54	<0.49	<0.55	<0.54	**10.5**	<0.47	**55.7**	1,000	1,000	1,000	10,000
Fluorene	<0.46	<0.57	<0.58	<0.46	<0.54	<0.49	<0.55	<0.54	**0.7**	<0.47	**4.7**	1,000	1,000	1,000	10,000
Indeno(1,2,3-cd)pyrene	<0.46	<0.57	<0.58	<0.46	<0.54	<0.49	<0.55	<0.54	**2.9**	<0.47	**11.4**	7	7	7	3,000
2-Methylnaphthalene	<0.46	<0.57	<0.58	<0.46	<0.54	<0.49	<0.55	<0.54	<0.44	<0.47	<0.47	80	300	0.7	5,000
Naphthalene	<0.46	<0.57	<0.58	<0.46	<0.54	<0.49	<0.55	<0.54	<0.44	<0.47	<0.47	40	500	4	10,000
Phenanthrene	<0.46	**0.6**	<0.58	**4.2**	<0.54	<0.49	<0.55	<0.54	**6.7**	<0.47	**44.5**	500	500	10	10,000
Pyrene	**1.1**	**1.5**	<0.58	**5.1**	<0.54	<0.49	<0.55	<0.54	**7.9**	<0.47	**39.2**	1,000	1,000	1,000	10,000
VOLATILE PETROLEUM HYDROCARBONS (mg/kg)															
C5- C8 Aliphatics	<6.3	<8.6	--	<5.0	--	--	--	--	<5.7	<5.4	<5.0	100	100	100	5,000
C9- C12 Aliphatics	<6.3	<8.6	--	<5.0	--	--	--	--	<5.7	<5.4	<5.0	1,000	1,000	1,000	20,000
C9- C10 Aromatics	<6.3	<8.6	--	<5.0	--	--	--	--	<5.7	<5.4	<5.0	100	100	100	5,000
Benzene	<0.31	<0.43	--	<0.25	--	--	--	--	<0.28	<0.27	<0.25	40	40	2	10,000
Ethylbenzene	<0.31	<0.43	--	<0.25	--	--	--	--	<0.28	<0.27	<0.25	500	500	40	10,000
Methyl Tert Butyl Ether	<0.063	<0.086	--	<0.050	--	--	--	--	<0.057	<0.054	<0.050	100	100	0.1	5,000
Naphthalene	<0.31	<0.43	--	<0.25	--	--	--	--	<0.28	<0.27	<0.25	20	500	4	10,000
Toluene	<0.31	<0.43	--	<0.25	--	--	--	--	<0.28	<0.27	<0.25	500	500	30	10,000
m,p-Xylene	<0.31	<0.43	--	<0.25	--	--	--	--	--	--	--	100	500	100	10,000
o-Xylene	<0.31	<0.43	--	<0.25	--	--	--	--	--	--	--	100	500	100	10,000
Total Xylenes	<0.62	<0.86	--	<0.50	--	--	--	--	<0.56	<0.54	<0.50	100	500	100	10,000

NOTES:

-- is analysis not performed.	mg/kg is milligrams per kilogram.	VPH is volatile petroleum hydrocarbons
NE is not established.	mg/L is milligrams per liter.	<2.0 indicates not detected at or above the laboratory reporting limit of 2.0 mg/kg.
ND is not detected.	PID is photoionization detector.	Analytes detected above the method reporting limit are in **Bold**.
ppmv is parts per million by volume.	EPH is extractable petroleum hydrocarbons	Analytes detected above MCP Reportable Concentrations are in **Red**.

TABLE 4
SUMMARY OF SOIL ANALYTICAL DATA - EPH, VPH

Maggiore Somerville
343-351 Summer Street
Somerville, Massachusetts

Sample Date	August 12, 2016						March 28, 2017					MCP Method 1 Soil Standards (mg/kg)		MCP Reportable Concentrations (mg/kg)	MCP Method 3 Upper Concentration Limits (mg/kg)
Sample ID	S-4	S-5	S-6	S-7	S-8	Stockpile	PC-1 0-15' COMP	PC-1 0-5'	PC-1 10-15'	PC-1 5-10'	PC-2 0-15' COMP	S-1		RCS-1	
Depth (feet)	7-8	7	5	6	6	NA	0-15	0-5	10-15	5-10	0-15	GW-2	GW-3		
PID (ppmv)	BDL	BDL	BDL	BDL	BDL	225.1	BDL	BDL	BDL	BDL	BDL				
EXTRACTABLE PETROLEUM HYDROCARBONS (mg/kg)															
C9-C18 Aliphatics	<8.9	<9.1	**13.4**	**10.3**	<9.4	**1,390**	--	--	--	--	--	1,000	1,000	1,000	20,000
C19-C36 Aliphatics	<18	**64.9**	**488**	**380**	**226**	**5,850**	--	--	--	--	--	3,000	3,000	3,000	20,000
C11-C22 Aromatics	<18	**161**	**294**	**171**	**128**	**2,350**	--	--	--	--	--	1,000	1,000	1,000	10,000
Acenaphthene	<0.44	**0.7**	<0.46	<0.46	<0.47	**2.6**	--	--	--	--	--	1,000	1,000	4	10,000
Acenaphthylene	<0.44	<0.45	<0.46	<0.46	<0.47	<0.50	--	--	--	--	--	600	10	1	10,000
Anthracene	<0.44	**1.9**	<0.46	<0.46	<0.47	**0.9**	--	--	--	--	--	1,000	1,000	1,000	10,000
Benzo(a)anthracene	<0.44	**6.2**	<0.46	<0.46	**0.7**	**3.3**	--	--	--	--	--	7	7	7	3,000
Benzo(a)pyrene	<0.44	**5.5**	<0.46	<0.46	**0.9**	<0.50	--	--	--	--	--	2	2	2	300
Benzo(b)fluoranthene	<0.44	**5.9**	<0.46	<0.46	**0.6**	<0.50	--	--	--	--	--	7	7	7	3,000
Benzo(g.h.i)perylene	<0.44	**3.4**	<0.46	<0.46	**0.8**	<0.50	--	--	--	--	--	1,000	1,000	1,000	10,000
Benzo(k)fluoranthene	<0.44	**2.9**	<0.46	<0.46	**0.6**	<0.50	--	--	--	--	--	70	70	70	10,000
Chrysene	<0.44	**5.5**	<0.46	<0.46	**0.7**	**3.3**	--	--	--	--	--	70	70	70	10,000
Dibenz(a,h)anthracene	<0.44	**1.2**	<0.46	<0.46	<0.47	<0.50	--	--	--	--	--	0.7	0.7	0.7	300
Fluoranthene	<0.44	**12.5**	<0.46	<0.46	**1.4**	**5.3**	--	--	--	--	--	1,000	1,000	1,000	10,000
Fluorene	<0.44	**0.8**	<0.46	<0.46	<0.47	**2.8**	--	--	--	--	--	1,000	1,000	1,000	10,000
Indeno(1,2,3-cd)pyrene	<0.44	**3.4**	<0.46	<0.46	<0.47	<0.50	--	--	--	--	--	7	7	7	3,000
2-Methylnaphthalene	<0.44	<0.45	<0.46	<0.46	<0.47	**41.4**	--	--	--	--	--	80	300	0.7	5,000
Naphthalene	<0.44	<0.45	<0.46	<0.46	<0.47	**24.1**	--	--	--	--	--	40	500	4	10,000
Phenanthrene	<0.44	**9.1**	<0.46	<0.46	**0.8**	**4.6**	--	--	--	--	--	500	500	10	10,000
Pyrene	<0.44	**9.5**	<0.46	<0.46	**1.1**	**4.6**	--	--	--	--	--	1,000	1,000	1,000	10,000
VOLATILE PETROLEUM HYDROCARBONS (mg/kg)															
C5- C8 Aliphatics	<5.1	<5.7	<5.8	<9.1	<5.2	**118**	--	--	--	--	--	100	100	100	5,000
C9- C12 Aliphatics	<5.1	<5.7	<5.8	<9.1	<5.2	**398**	--	--	--	--	--	1,000	1,000	1,000	20,000
C9- C10 Aromatics	<5.1	<5.7	<5.8	<9.1	<5.2	**566**	--	--	--	--	--	100	100	100	5,000
Benzene	<0.26	<0.29	<0.29	<0.46	<0.26	0.4	--	--	--	--	--	40	40	2	10,000
Ethylbenzene	<0.26	<0.29	<0.29	<0.46	<0.26	13.6	--	--	--	--	--	500	500	40	10,000
Methyl Tert Butyl Ether	<0.051	<0.057	<0.058	<0.091	<0.052	<0.063	--	--	--	--	--	100	100	0.1	5,000
Naphthalene	<0.26	<0.29	<0.29	<0.46	<0.26	**23.3**	--	--	--	--	--	20	500	4	10,000
Toluene	<0.26	<0.29	<0.29	<0.46	<0.26	**11.0**	--	--	--	--	--	500	500	30	10,000
m.p-Xylene	--	--	--	--	--	--	--	--	--	--	--	100	500	100	10,000
o-Xylene	--	--	--	--	--	--	--	--	--	--	--	100	500	100	10,000
Total Xylenes	<0.52	<0.58	<0.58	<0.92	<0.52	**63.1**	--	--	--	--	--	100	500	100	10,000

NOTES:

-- is analysis not performed.
NE is not established.
ND is not detected.
ppmv is parts per million by volume.

mg/kg is milligrams per kilogram.
mg/L is milligrams per liter.
PID is photoionization detector.
EPH is extractable petroleum hydrocarbons

VPH is volatile petroleum hydrocarbons
<2.0 indicates not detected at or above the laboratory reporting limit of 2.0 mg/kg.
Analytes detected above the method reporting limit are in **Bold**.
Analytes detected above MCP Reportable Concentrations are in **Red**.

TABLE 4
SUMMARY OF SOIL ANALYTICAL DATA - EPH, VPH

Maggiore Somerville
343-351 Summer Street
Somerville, Massachusetts

Sample Date	March 28, 2017											MCP Method 1 Soil Standards (mg/kg)		MCP Reportable Concentrations (mg/kg)	MCP Method 3 Upper Concentration Limits (mg/kg)
Sample ID	PC-2 0-5'	PC-2 10-15'	PC-2 5-10'	PC-3 0-15' COMP	PC-3 0-5'	PC-3 10-15'	PC-3 5-10'	PC-4 0-15' COMP	PC-4 0-5'	PC-4 10-15'	PC-4 5-10'	S-1		RCS-1	
Depth (feet)	0-5	10-15	5-10	0-15	0-5	10-15	5-10	0-15	0-5	10-15	5-10	GW-2	GW-3		
PID (ppmv)	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL				
EXTRACTABLE PETROLEUM HYDROCARBONS (mg/kg)															
C9-C18 Aliphatics	--	--	--	--	--	--	--	--	--	--	--	1,000	1,000	1,000	20,000
C19-C36 Aliphatics	--	--	--	--	--	--	--	--	--	--	--	3,000	3,000	3,000	20,000
C11-C22 Aromatics	--	--	--	--	--	--	--	--	--	--	--	1,000	1,000	1,000	10,000
Acenaphthene	--	--	--	--	--	--	--	--	--	--	--	1,000	1,000	4	10,000
Acenaphthylene	--	--	--	--	--	--	--	--	--	--	--	600	10	1	10,000
Anthracene	--	--	--	--	--	--	--	--	--	--	--	1,000	1,000	1,000	10,000
Benzo(a)anthracene	--	--	--	--	--	--	--	--	--	--	--	7	7	7	3,000
Benzo(a)pyrene	--	--	--	--	--	--	--	--	--	--	--	2	2	2	300
Benzo(b)fluoranthene	--	--	--	--	--	--	--	--	--	--	--	7	7	7	3,000
Benzo(g,h,i)perylene	--	--	--	--	--	--	--	--	--	--	--	1,000	1,000	1,000	10,000
Benzo(k)fluoranthene	--	--	--	--	--	--	--	--	--	--	--	70	70	70	10,000
Chrysene	--	--	--	--	--	--	--	--	--	--	--	70	70	70	10,000
Dibenz(a,h)anthracene	--	--	--	--	--	--	--	--	--	--	--	0.7	0.7	0.7	300
Fluoranthene	--	--	--	--	--	--	--	--	--	--	--	1,000	1,000	1,000	10,000
Fluorene	--	--	--	--	--	--	--	--	--	--	--	1,000	1,000	1,000	10,000
Indeno(1,2,3-cd)pyrene	--	--	--	--	--	--	--	--	--	--	--	7	7	7	3,000
2-Methylnaphthalene	--	--	--	--	--	--	--	--	--	--	--	80	300	0.7	5,000
Naphthalene	--	--	--	--	--	--	--	--	--	--	--	40	500	4	10,000
Phenanthrene	--	--	--	--	--	--	--	--	--	--	--	500	500	10	10,000
Pyrene	--	--	--	--	--	--	--	--	--	--	--	1,000	1,000	1,000	10,000
VOLATILE PETROLEUM HYDROCARBONS (mg/kg)															
C5- C8 Aliphatics	--	--	--	--	--	--	--	--	--	--	--	100	100	100	5,000
C9- C12 Aliphatics	--	--	--	--	--	--	--	--	--	--	--	1,000	1,000	1,000	20,000
C9- C10 Aromatics	--	--	--	--	--	--	--	--	--	--	--	100	100	100	5,000
Benzene	--	--	--	--	--	--	--	--	--	--	--	40	40	2	10,000
Ethylbenzene	--	--	--	--	--	--	--	--	--	--	--	500	500	40	10,000
Methyl Tert Butyl Ether	--	--	--	--	--	--	--	--	--	--	--	100	100	0.1	5,000
Naphthalene	--	--	--	--	--	--	--	--	--	--	--	20	500	4	10,000
Toluene	--	--	--	--	--	--	--	--	--	--	--	500	500	30	10,000
m,p-Xylene	--	--	--	--	--	--	--	--	--	--	--	100	500	100	10,000
o-Xylene	--	--	--	--	--	--	--	--	--	--	--	100	500	100	10,000
Total Xylenes	--	--	--	--	--	--	--	--	--	--	--	100	500	100	10,000

NOTES:

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NE is not established.
ND is not detected.
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mg/kg is milligrams per kilogram.
mg/L is milligrams per liter.
PID is photoionization detector.
EPH is extractable petroleum hydrocarbons

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Analytes detected above MCP Reportable Concentrations are in Red.

TABLE 4
SUMMARY OF SOIL ANALYTICAL DATA - EPH, VPH

Maggiore Somerville
343-351 Summer Street
Somerville, Massachusetts

Sample Date	March 28, 2017										MCP Method 1 Soil Standards (mg/kg)		MCP Reportable Concentrations (mg/kg)	MCP Method 3 Upper Concentration Limits (mg/kg)
Sample ID	PC-5 0-15' COMP	PC-5 0-5'	PC-5 10-15'	PC-5 5-10'	PC-6 0-15' COMP	PC-6 0-5'	PC-6 10-15'	PC-6 5-10'	PC-7 0-15'	PC-7 0-5'	S-1		RCS-1	
Depth (feet)	0-15	0-5	10-15	5-10	0-15	0-5	10-15	5-10	0-15	0-5				
PID (ppmv)	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	GW-2	GW-3		
EXTRACTABLE PETROLEUM HYDROCARBONS (mg/kg)														
C9-C18 Aliphatics	--	--	--	--	--	--	--	--	--	--	1,000	1,000	1,000	20,000
C19-C36 Aliphatics	--	--	--	--	--	--	--	--	--	--	3,000	3,000	3,000	20,000
C11-C22 Aromatics	--	--	--	--	--	--	--	--	--	--	1,000	1,000	1,000	10,000
Acenaphthene	--	--	--	--	--	--	--	--	--	--	1,000	1,000	4	10,000
Acenaphthylene	--	--	--	--	--	--	--	--	--	--	600	10	1	10,000
Anthracene	--	--	--	--	--	--	--	--	--	--	1,000	1,000	1,000	10,000
Benzo(a)anthracene	--	--	--	--	--	--	--	--	--	--	7	7	7	3,000
Benzo(a)pyrene	--	--	--	--	--	--	--	--	--	--	2	2	2	300
Benzo(b)fluoranthene	--	--	--	--	--	--	--	--	--	--	7	7	7	3,000
Benzo(g,h,i)perylene	--	--	--	--	--	--	--	--	--	--	1,000	1,000	1,000	10,000
Benzo(k)fluoranthene	--	--	--	--	--	--	--	--	--	--	70	70	70	10,000
Chrysene	--	--	--	--	--	--	--	--	--	--	70	70	70	10,000
Dibenz(a,h)anthracene	--	--	--	--	--	--	--	--	--	--	0.7	0.7	0.7	300
Fluoranthene	--	--	--	--	--	--	--	--	--	--	1,000	1,000	1,000	10,000
Fluorene	--	--	--	--	--	--	--	--	--	--	1,000	1,000	1,000	10,000
Indeno(1,2,3-cd)pyrene	--	--	--	--	--	--	--	--	--	--	7	7	7	3,000
2-Methylnaphthalene	--	--	--	--	--	--	--	--	--	--	80	300	0.7	5,000
Naphthalene	--	--	--	--	--	--	--	--	--	--	40	500	4	10,000
Phenanthrene	--	--	--	--	--	--	--	--	--	--	500	500	10	10,000
Pyrene	--	--	--	--	--	--	--	--	--	--	1,000	1,000	1,000	10,000
VOLATILE PETROLEUM HYDROCARBONS (mg/kg)														
C5- C8 Aliphatics	--	--	--	--	--	--	--	--	--	--	100	100	100	5,000
C9- C12 Aliphatics	--	--	--	--	--	--	--	--	--	--	1,000	1,000	1,000	20,000
C9- C10 Aromatics	--	--	--	--	--	--	--	--	--	--	100	100	100	5,000
Benzene	--	--	--	--	--	--	--	--	--	--	40	40	2	10,000
Ethylbenzene	--	--	--	--	--	--	--	--	--	--	500	500	40	10,000
Methyl Tert Butyl Ether	--	--	--	--	--	--	--	--	--	--	100	100	0.1	5,000
Naphthalene	--	--	--	--	--	--	--	--	--	--	20	500	4	10,000
Toluene	--	--	--	--	--	--	--	--	--	--	500	500	30	10,000
m,p-Xylene	--	--	--	--	--	--	--	--	--	--	100	500	100	10,000
o-Xylene	--	--	--	--	--	--	--	--	--	--	100	500	100	10,000
Total Xylenes	--	--	--	--	--	--	--	--	--	--	100	500	100	10,000

NOTES:

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ND is not detected.
ppmv is parts per million by volume.

mg/kg is milligrams per kilogram.
mg/L is milligrams per liter.
PID is photoionization detector.
EPH is extractable petroleum hydrocarbons

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TABLE 4
SUMMARY OF SOIL ANALYTICAL DATA - EPH, VPH

Maggiore Somerville
343-351 Summer Street
Somerville, Massachusetts

Sample Date	March 28, 2017										MCP Method 1 Soil Standards (mg/kg)		MCP Reportable Concentrations (mg/kg)	MCP Method 3 Upper Concentration Limits (mg/kg)
Sample ID	PC-7 10-15'	PC-7 5-10'	PC-8 0-15' COMP	PC-8 0-5'	PC-8 10-15'	PC-8 5-10'	PC-9 0-15' COMP	PC-9 0-5'	PC-9 10-15'	PC-9 5-10'	S-1		RCS-1	
Depth (feet)	10-15	5-10	0-15	0-5	10-15	5-10	0-15	0-5	10-15	5-10	GW-2	GW-3		
PID (ppmv)	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL				
EXTRACTABLE PETROLEUM HYDROCARBONS (mg/kg)														
C9-C18 Aliphatics	--	--	--	--	--	--	--	--	--	--	1,000	1,000	1,000	20,000
C19-C36 Aliphatics	--	--	--	--	--	--	--	--	--	--	3,000	3,000	3,000	20,000
C11-C22 Aromatics	--	--	--	--	--	--	--	--	--	--	1,000	1,000	1,000	10,000
Acenaphthene	--	--	--	--	--	--	--	--	--	--	1,000	1,000	4	10,000
Acenaphthylene	--	--	--	--	--	--	--	--	--	--	600	10	1	10,000
Anthracene	--	--	--	--	--	--	--	--	--	--	1,000	1,000	1,000	10,000
Benzo(a)anthracene	--	--	--	--	--	--	--	--	--	--	7	7	7	3,000
Benzo(a)pyrene	--	--	--	--	--	--	--	--	--	--	2	2	2	300
Benzo(b)fluoranthene	--	--	--	--	--	--	--	--	--	--	7	7	7	3,000
Benzo(g,h,i)perylene	--	--	--	--	--	--	--	--	--	--	1,000	1,000	1,000	10,000
Benzo(k)fluoranthene	--	--	--	--	--	--	--	--	--	--	70	70	70	10,000
Chrysene	--	--	--	--	--	--	--	--	--	--	70	70	70	10,000
Dibenz(a,h)anthracene	--	--	--	--	--	--	--	--	--	--	0.7	0.7	0.7	300
Fluoranthene	--	--	--	--	--	--	--	--	--	--	1,000	1,000	1,000	10,000
Fluorene	--	--	--	--	--	--	--	--	--	--	1,000	1,000	1,000	10,000
Indeno(1,2,3-cd)pyrene	--	--	--	--	--	--	--	--	--	--	7	7	7	3,000
2-Methylnaphthalene	--	--	--	--	--	--	--	--	--	--	80	300	0.7	5,000
Naphthalene	--	--	--	--	--	--	--	--	--	--	40	500	4	10,000
Phenanthrene	--	--	--	--	--	--	--	--	--	--	500	500	10	10,000
Pyrene	--	--	--	--	--	--	--	--	--	--	1,000	1,000	1,000	10,000
VOLATILE PETROLEUM HYDROCARBONS (mg/kg)														
C5- C8 Aliphatics	--	--	--	--	--	--	--	--	--	--	100	100	100	5,000
C9- C12 Aliphatics	--	--	--	--	--	--	--	--	--	--	1,000	1,000	1,000	20,000
C9- C10 Aromatics	--	--	--	--	--	--	--	--	--	--	100	100	100	5,000
Benzene	--	--	--	--	--	--	--	--	--	--	40	40	2	10,000
Ethylbenzene	--	--	--	--	--	--	--	--	--	--	500	500	40	10,000
Methyl Tert Butyl Ether	--	--	--	--	--	--	--	--	--	--	100	100	0.1	5,000
Naphthalene	--	--	--	--	--	--	--	--	--	--	20	500	4	10,000
Toluene	--	--	--	--	--	--	--	--	--	--	500	500	30	10,000
m,p-Xylene	--	--	--	--	--	--	--	--	--	--	100	500	100	10,000
o-Xylene	--	--	--	--	--	--	--	--	--	--	100	500	100	10,000
Total Xylenes	--	--	--	--	--	--	--	--	--	--	100	500	100	10,000

NOTES:

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NE is not established.
ND is not detected.
ppmv is parts per million by volume.

mg/kg is milligrams per kilogram.
mg/L is milligrams per liter.
PID is photoionization detector.
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EnviroTrac
Environmental Services

TABLE 4

SUMMARY OF SOIL ANALYTICAL DATA - EPH, VPH

Maggiore Somerville
343-351 Summer Street
Somerville, Massachusetts

Sample Date	March 28, 2017										MCP Method 1 Soil Standards (mg/kg)		MCP Reportable Concentrations (mg/kg)	MCP Method 3 Upper Concentration Limits (mg/kg)
Sample ID	PC-10 0-15'	PC-10 0-5'	PC-10 10-15'	PC-10 5-10'	PC-11 0-15' COMP	PC-11 0-5'	PC-11 10-15'	PC-11 5-10'	PC-12 0-15'	PC-12 0-5'	S-1		RCS-1	
Depth (feet)	0-15	0-5	10-15	5-10	0-15	0-5	10-15	5-10	0-15	0-5				
PID (ppmv)	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	GW-2	GW-3		
EXTRACTABLE PETROLEUM HYDROCARBONS (mg/kg)														
C9-C18 Aliphatics	--	--	--	--	--	--	--	--	--	--	1,000	1,000	1,000	20,000
C19-C36 Aliphatics	--	--	--	--	--	--	--	--	--	--	3,000	3,000	3,000	20,000
C11-C22 Aromatics	--	--	--	--	--	--	--	--	--	--	1,000	1,000	1,000	10,000
Acenaphthene	--	--	--	--	--	--	--	--	--	--	1,000	1,000	4	10,000
Acenaphthylene	--	--	--	--	--	--	--	--	--	--	600	10	1	10,000
Anthracene	--	--	--	--	--	--	--	--	--	--	1,000	1,000	1,000	10,000
Benzo(a)anthracene	--	--	--	--	--	--	--	--	--	--	7	7	7	3,000
Benzo(a)pyrene	--	--	--	--	--	--	--	--	--	--	2	2	2	300
Benzo(b)fluoranthene	--	--	--	--	--	--	--	--	--	--	7	7	7	3,000
Benzo(g,h,i)perylene	--	--	--	--	--	--	--	--	--	--	1,000	1,000	1,000	10,000
Benzo(k)fluoranthene	--	--	--	--	--	--	--	--	--	--	70	70	70	10,000
Chrysene	--	--	--	--	--	--	--	--	--	--	70	70	70	10,000
Dibenz(a,h)anthracene	--	--	--	--	--	--	--	--	--	--	0.7	0.7	0.7	300
Fluoranthene	--	--	--	--	--	--	--	--	--	--	1,000	1,000	1,000	10,000
Fluorene	--	--	--	--	--	--	--	--	--	--	1,000	1,000	1,000	10,000
Indeno(1,2,3-cd)pyrene	--	--	--	--	--	--	--	--	--	--	7	7	7	3,000
2-Methylnaphthalene	--	--	--	--	--	--	--	--	--	--	80	300	0.7	5,000
Naphthalene	--	--	--	--	--	--	--	--	--	--	40	500	4	10,000
Phenanthrene	--	--	--	--	--	--	--	--	--	--	500	500	10	10,000
Pyrene	--	--	--	--	--	--	--	--	--	--	1,000	1,000	1,000	10,000
VOLATILE PETROLEUM HYDROCARBONS (mg/kg)														
C5- C8 Aliphatics	--	--	--	--	--	--	--	--	--	--	100	100	100	5,000
C9- C12 Aliphatics	--	--	--	--	--	--	--	--	--	--	1,000	1,000	1,000	20,000
C9- C10 Aromatics	--	--	--	--	--	--	--	--	--	--	100	100	100	5,000
Benzene	--	--	--	--	--	--	--	--	--	--	40	40	2	10,000
Ethylbenzene	--	--	--	--	--	--	--	--	--	--	500	500	40	10,000
Methyl Tert Butyl Ether	--	--	--	--	--	--	--	--	--	--	100	100	0.1	5,000
Naphthalene	--	--	--	--	--	--	--	--	--	--	20	500	4	10,000
Toluene	--	--	--	--	--	--	--	--	--	--	500	500	30	10,000
m,p-Xylene	--	--	--	--	--	--	--	--	--	--	100	500	100	10,000
o-Xylene	--	--	--	--	--	--	--	--	--	--	100	500	100	10,000
Total Xylenes	--	--	--	--	--	--	--	--	--	--	100	500	100	10,000

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Maggiore Somerville
343-351 Summer Street
Somerville, Massachusetts

Sample Date	March 28, 2017										MCP Method 1 Soil Standards (mg/kg)		MCP Reportable Concentrations (mg/kg)	MCP Method 3 Upper Concentration Limits (mg/kg)
Sample ID	PC-12 10-15'	PC-12 5-10'	PC-13 0-15 'COMP	PC-13 0-5'	PC-13 10-15'	PC-13 5-10'	PC-14 0-15' COMP	PC-14 0-5'	PC-14 10-15'	PC-14 5-10'	S-1		RCS-1	
Depth (feet)	10-15	5-10	0-15	0-5	10-15	5-10	0-15	0-5	10-15	5-10	GW-2	GW-3		
PID (ppmv)	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL				
EXTRACTABLE PETROLEUM HYDROCARBONS (mg/kg)														
C9-C18 Aliphatics	--	--	--	--	--	--	--	--	--	--	1,000	1,000	1,000	20,000
C19-C36 Aliphatics	--	--	--	--	--	--	--	--	--	--	3,000	3,000	3,000	20,000
C11-C22 Aromatics	--	--	--	--	--	--	--	--	--	--	1,000	1,000	1,000	10,000
Acenaphthene	--	--	--	--	--	--	--	--	--	--	1,000	1,000	4	10,000
Acenaphthylene	--	--	--	--	--	--	--	--	--	--	600	10	1	10,000
Anthracene	--	--	--	--	--	--	--	--	--	--	1,000	1,000	1,000	10,000
Benzo(a)anthracene	--	--	--	--	--	--	--	--	--	--	7	7	7	3,000
Benzo(a)pyrene	--	--	--	--	--	--	--	--	--	--	2	2	2	300
Benzo(b)fluoranthene	--	--	--	--	--	--	--	--	--	--	7	7	7	3,000
Benzo(g,h,i)perylene	--	--	--	--	--	--	--	--	--	--	1,000	1,000	1,000	10,000
Benzo(k)fluoranthene	--	--	--	--	--	--	--	--	--	--	70	70	70	10,000
Chrysene	--	--	--	--	--	--	--	--	--	--	70	70	70	10,000
Dibenz(a,h)anthracene	--	--	--	--	--	--	--	--	--	--	0.7	0.7	0.7	300
Fluoranthene	--	--	--	--	--	--	--	--	--	--	1,000	1,000	1,000	10,000
Fluorene	--	--	--	--	--	--	--	--	--	--	1,000	1,000	1,000	10,000
Indeno(1,2,3-cd)pyrene	--	--	--	--	--	--	--	--	--	--	7	7	7	3,000
2-Methylnaphthalene	--	--	--	--	--	--	--	--	--	--	80	300	0.7	5,000
Naphthalene	--	--	--	--	--	--	--	--	--	--	40	500	4	10,000
Phenanthrene	--	--	--	--	--	--	--	--	--	--	500	500	10	10,000
Pyrene	--	--	--	--	--	--	--	--	--	--	1,000	1,000	1,000	10,000
VOLATILE PETROLEUM HYDROCARBONS (mg/kg)														
C5- C8 Aliphatics	--	--	--	--	--	--	--	--	--	--	100	100	100	5,000
C9- C12 Aliphatics	--	--	--	--	--	--	--	--	--	--	1,000	1,000	1,000	20,000
C9- C10 Aromatics	--	--	--	--	--	--	--	--	--	--	100	100	100	5,000
Benzene	--	--	--	--	--	--	--	--	--	--	40	40	2	10,000
Ethylbenzene	--	--	--	--	--	--	--	--	--	--	500	500	40	10,000
Methyl Tert Butyl Ether	--	--	--	--	--	--	--	--	--	--	100	100	0.1	5,000
Naphthalene	--	--	--	--	--	--	--	--	--	--	20	500	4	10,000
Toluene	--	--	--	--	--	--	--	--	--	--	500	500	30	10,000
m,p-Xylene	--	--	--	--	--	--	--	--	--	--	100	500	100	10,000
o-Xylene	--	--	--	--	--	--	--	--	--	--	100	500	100	10,000
Total Xylenes	--	--	--	--	--	--	--	--	--	--	100	500	100	10,000

NOTES:

-- is analysis not performed.
NE is not established.
ND is not detected.
ppmv is parts per million by volume.

mg/kg is milligrams per kilogram.
mg/L is milligrams per liter.
PID is photoionization detector.
EPH is extractable petroleum hydrocarbons

VPH is volatile petroleum hydrocarbons
<2.0 indicates not detected at or above the laboratory reporting limit of 2.0 mg/kg.
Analytes detected above the method reporting limit are in **Bold**.
Analytes detected above MCP Reportable Concentrations are in Red.

TABLE 4
SUMMARY OF SOIL ANALYTICAL DATA - EPH, VPH

Maggiore Somerville
343-351 Summer Street
Somerville, Massachusetts

Sample Date	March 28, 2017										MCP Method 1 Soil Standards (mg/kg)		MCP Reportable Concentrations (mg/kg)	MCP Method 3 Upper Concentration Limits (mg/kg)
Sample ID	PC-15 0-15' COMP	PC-15 0-5'	PC-15 10-15'	PC-15 5-10'	PC-16 0-5' COMP	PC-16A 0-5'	PC-16B 0-5'	PC-16C 0-5'	PC-17 0-5' COMP	PC-17A 0-5'	S-1		RCS-1	
Depth (feet)	0-15	0-5	10-15	5-10	0-5	0-5	0-5	0-5	0-5	0-5	GW-2	GW-3		
PID (ppmv)	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL				
EXTRACTABLE PETROLEUM HYDROCARBONS (mg/kg)														
C9-C18 Aliphatics	--	--	--	--	--	--	--	--	--	--	1,000	1,000	1,000	20,000
C19-C36 Aliphatics	--	--	--	--	--	--	--	--	--	--	3,000	3,000	3,000	20,000
C11-C22 Aromatics	--	--	--	--	--	--	--	--	--	--	1,000	1,000	1,000	10,000
Acenaphthene	--	--	--	--	--	--	--	--	--	--	1,000	1,000	4	10,000
Acenaphthylene	--	--	--	--	--	--	--	--	--	--	600	10	1	10,000
Anthracene	--	--	--	--	--	--	--	--	--	--	1,000	1,000	1,000	10,000
Benzo(a)anthracene	--	--	--	--	--	--	--	--	--	--	7	7	7	3,000
Benzo(a)pyrene	--	--	--	--	--	--	--	--	--	--	2	2	2	300
Benzo(b)fluoranthene	--	--	--	--	--	--	--	--	--	--	7	7	7	3,000
Benzo(g,h,i)perylene	--	--	--	--	--	--	--	--	--	--	1,000	1,000	1,000	10,000
Benzo(k)fluoranthene	--	--	--	--	--	--	--	--	--	--	70	70	70	10,000
Chrysene	--	--	--	--	--	--	--	--	--	--	70	70	70	10,000
Dibenz(a,h)anthracene	--	--	--	--	--	--	--	--	--	--	0.7	0.7	0.7	300
Fluoranthene	--	--	--	--	--	--	--	--	--	--	1,000	1,000	1,000	10,000
Fluorene	--	--	--	--	--	--	--	--	--	--	1,000	1,000	1,000	10,000
Indeno(1,2,3-cd)pyrene	--	--	--	--	--	--	--	--	--	--	7	7	7	3,000
2-Methylnaphthalene	--	--	--	--	--	--	--	--	--	--	80	300	0.7	5,000
Naphthalene	--	--	--	--	--	--	--	--	--	--	40	500	4	10,000
Phenanthrene	--	--	--	--	--	--	--	--	--	--	500	500	10	10,000
Pyrene	--	--	--	--	--	--	--	--	--	--	1,000	1,000	1,000	10,000
VOLATILE PETROLEUM HYDROCARBONS (mg/kg)														
C5- C8 Aliphatics	--	--	--	--	--	--	--	--	--	--	100	100	100	5,000
C9- C12 Aliphatics	--	--	--	--	--	--	--	--	--	--	1,000	1,000	1,000	20,000
C9- C10 Aromatics	--	--	--	--	--	--	--	--	--	--	100	100	100	5,000
Benzene	--	--	--	--	--	--	--	--	--	--	40	40	2	10,000
Ethylbenzene	--	--	--	--	--	--	--	--	--	--	500	500	40	10,000
Methyl Tert Butyl Ether	--	--	--	--	--	--	--	--	--	--	100	100	0.1	5,000
Naphthalene	--	--	--	--	--	--	--	--	--	--	20	500	4	10,000
Toluene	--	--	--	--	--	--	--	--	--	--	500	500	30	10,000
m,p-Xylene	--	--	--	--	--	--	--	--	--	--	100	500	100	10,000
o-Xylene	--	--	--	--	--	--	--	--	--	--	100	500	100	10,000
Total Xylenes	--	--	--	--	--	--	--	--	--	--	100	500	100	10,000

NOTES:

-- is analysis not performed.
NE is not established.
ND is not detected.
ppmv is parts per million by volume.

mg/kg is milligrams per kilogram.
mg/L is milligrams per liter.
PID is photoionization detector.
EPH is extractable petroleum hydrocarbons

VPH is volatile petroleum hydrocarbons
<2.0 indicates not detected at or above the laboratory reporting limit of 2.0 mg/kg.
Analytes detected above the method reporting limit are in **Bold**.
Analytes detected above MCP Reportable Concentrations are in **Red**.

TABLE 4
SUMMARY OF SOIL ANALYTICAL DATA - EPH, VPH

Maggiore Somerville
343-351 Summer Street
Somerville, Massachusetts

Sample Date	March 28, 2017										MCP Method 1 Soil Standards (mg/kg)		MCP Reportable Concentrations (mg/kg)	MCP Method 3 Upper Concentration Limits (mg/kg)
Sample ID	PC-17B 0-5'	PC-17C 0-5'	PC-18 0-5' COMP	PC-18A 0-5'	PC-18B 0-5'	PC-18C 0-5'	PC-19 0-5' COMP	PC-19A 0-5'	PC-19B 0-5'	PC-19C 0-5'	S-1		RCS-1	
Depth (feet)	0-5	0-5	0-5	0-5	0-5	0-5	0-5	0-5	0-5	0-5	GW-2	GW-3		
PID (ppmv)	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL				
EXTRACTABLE PETROLEUM HYDROCARBONS (mg/kg)														
C9-C18 Aliphatics	--	--	--	--	--	--	--	--	--	--	1,000	1,000	1,000	20,000
C19-C36 Aliphatics	--	--	--	--	--	--	--	--	--	--	3,000	3,000	3,000	20,000
C11-C22 Aromatics	--	--	--	--	--	--	--	--	--	--	1,000	1,000	1,000	10,000
Acenaphthene	--	--	--	--	--	--	--	--	--	--	1,000	1,000	4	10,000
Acenaphthylene	--	--	--	--	--	--	--	--	--	--	600	10	1	10,000
Anthracene	--	--	--	--	--	--	--	--	--	--	1,000	1,000	1,000	10,000
Benzo(a)anthracene	--	--	--	--	--	--	--	--	--	--	7	7	7	3,000
Benzo(a)pyrene	--	--	--	--	--	--	--	--	--	--	2	2	2	300
Benzo(b)fluoranthene	--	--	--	--	--	--	--	--	--	--	7	7	7	3,000
Benzo(g,h,i)perylene	--	--	--	--	--	--	--	--	--	--	1,000	1,000	1,000	10,000
Benzo(k)fluoranthene	--	--	--	--	--	--	--	--	--	--	70	70	70	10,000
Chrysene	--	--	--	--	--	--	--	--	--	--	70	70	70	10,000
Dibenz(a,h)anthracene	--	--	--	--	--	--	--	--	--	--	0.7	0.7	0.7	300
Fluoranthene	--	--	--	--	--	--	--	--	--	--	1,000	1,000	1,000	10,000
Fluorene	--	--	--	--	--	--	--	--	--	--	1,000	1,000	1,000	10,000
Indeno(1,2,3-cd)pyrene	--	--	--	--	--	--	--	--	--	--	7	7	7	3,000
2-Methylnaphthalene	--	--	--	--	--	--	--	--	--	--	80	300	0.7	5,000
Naphthalene	--	--	--	--	--	--	--	--	--	--	40	500	4	10,000
Phenanthrene	--	--	--	--	--	--	--	--	--	--	500	500	10	10,000
Pyrene	--	--	--	--	--	--	--	--	--	--	1,000	1,000	1,000	10,000
VOLATILE PETROLEUM HYDROCARBONS (mg/kg)														
C5- C8 Aliphatics	--	--	--	--	--	--	--	--	--	--	100	100	100	5,000
C9- C12 Aliphatics	--	--	--	--	--	--	--	--	--	--	1,000	1,000	1,000	20,000
C9- C10 Aromatics	--	--	--	--	--	--	--	--	--	--	100	100	100	5,000
Benzene	--	--	--	--	--	--	--	--	--	--	40	40	2	10,000
Ethylbenzene	--	--	--	--	--	--	--	--	--	--	500	500	40	10,000
Methyl Tert Butyl Ether	--	--	--	--	--	--	--	--	--	--	100	100	0.1	5,000
Naphthalene	--	--	--	--	--	--	--	--	--	--	20	500	4	10,000
Toluene	--	--	--	--	--	--	--	--	--	--	500	500	30	10,000
m,p-Xylene	--	--	--	--	--	--	--	--	--	--	100	500	100	10,000
o-Xylene	--	--	--	--	--	--	--	--	--	--	100	500	100	10,000
Total Xylenes	--	--	--	--	--	--	--	--	--	--	100	500	100	10,000

NOTES:

-- is analysis not performed.
NE is not established.
ND is not detected.
ppmv is parts per million by volume.

mg/kg is milligrams per kilogram.
mg/L is milligrams per liter.
PID is photoionization detector.
EPH is extractable petroleum hydrocarbons

VPH is volatile petroleum hydrocarbons
<2.0 indicates not detected at or above the laboratory reporting limit of 2.0 mg/kg.
Analytes detected above the method reporting limit are in **Bold**.
Analytes detected above MCP Reportable Concentrations are in Red.

TABLE 5
SUMMARY OF SOIL ANALYTICAL DATA - ALL OTHER ANALYSES

Maggiore Somerville
343-351 Summer Street
Somerville, Massachusetts

Sample Date	August 8, 2016								August 12, 2016				MCP Method 1 Soil Standards (mg/kg)		MCP Reportable Concentrations (mg/kg)	MCP Method 3 Upper Concentration Limits (mg/kg)	TCLP Regulatory Level (mg/kg)
Sample ID	B-101	B-102	B-103	B-104	MW-105	MW-106	MW-107	MW-108	S-1	S-2	S-3	S-4					
Depth (feet)	0-10	0-10	13	0-10	13.5	9	13	13.5	8-9	8	8.5	7-8	S-1				
PID (ppmv)	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	GW-2	GW-3	RCS-1		
SEMI-VOLATILE ORGANIC COMPOUNDS 8270D (mg/kg)																	
Benzoic acid	<0.51	<0.62	--	<0.51	--	--	--	--	--	--	--	--	NE	NE	1000	NE	--
2-Chlorophenol	<0.25	<0.31	--	<0.25	--	--	--	--	--	--	--	--	100	100	0.7	3,000	--
4-Chloro-3-methyl phenol	<0.51	<0.62	--	<0.51	--	--	--	--	--	--	--	--	NE	NE	1000	NE	--
2,4-Dichlorophenol	<0.51	<0.62	--	<0.51	--	--	--	--	--	--	--	--	60	40	0.7	8,000	--
2,4-Dimethylphenol	<0.51	<0.62	--	<0.51	--	--	--	--	--	--	--	--	100	500	0.7	10,000	--
2,4-Dinitrophenol	<0.51	<0.62	--	<0.51	--	--	--	--	--	--	--	--	50	50	3	8,000	--
2-Methylphenol	<0.51	<0.62	--	<0.51	--	--	--	--	--	--	--	--	NE	NE	500	NE	--
3&4-Methylphenol	<0.51	<0.62	--	<0.51	--	--	--	--	--	--	--	--	NE	NE	500	NE	--
2-Nitrophenol	<0.51	<0.62	--	<0.51	--	--	--	--	--	--	--	--	NE	NE	100	NE	--
4-Nitrophenol	<0.51	<0.62	--	<0.51	--	--	--	--	--	--	--	--	NE	NE	100	NE	--
Pentachlorophenol	<0.51	<0.62	--	<0.51	--	--	--	--	--	--	--	--	3	3	3	700	--
Phenol	<0.25	<0.31	--	<0.25	--	--	--	--	--	--	--	--	50	20	1	10,000	--
2,4,5-Trichlorophenol	<0.51	<0.62	--	<0.51	--	--	--	--	--	--	--	--	1000	600	4	10,000	--
2,4,6-Trichlorophenol	<0.51	<0.62	--	<0.51	--	--	--	--	--	--	--	--	20	20	0.7	4,000	--
Acenaphthene	<0.10	<0.12	--	**0.2**	--	--	--	--	--	--	--	--	1000	1000	4	10,000	--
Acenaphthylene	**0.1**	**0.3**	--	**0.2**	--	--	--	--	--	--	--	--	600	10	1	10,000	--
Acetophenone	<0.51	<0.62	--	<0.51	--	--	--	--	--	--	--	--	NE	NE	1000	NE	--
Aniline	<0.51	<0.62	--	<0.51	--	--	--	--	--	--	--	--	NE	NE	1000	NE	--
Anthracene	<0.10	**0.4**	--	**0.8**	--	--	--	--	--	--	--	--	1000	1000	1000	10,000	--
Benzo(a)anthracene	**0.6**	**2.0**	--	**2.3**	--	--	--	--	--	--	--	--	7	7	7	3,000	--
Benzo(a)pyrene	**0.9**	**1.6**	--	**1.9**	--	--	--	--	--	--	--	--	2	2	2	300	--
Benzo(b)fluoranthene	**0.8**	**1.5**	--	**1.7**	--	--	--	--	--	--	--	--	7	7	7	3,000	--
Benzo(g,h,i)perylene	**0.7**	**1.1**	--	**1.1**	--	--	--	--	--	--	--	--	1000	1000	1000	10,000	--
Benzo(k)fluoranthene	**0.7**	**1.8**	--	**1.6**	--	--	--	--	--	--	--	--	70	70	70	10,000	--
4-Bromophenyl phenyl ether	<0.25	<0.31	--	<0.25	--	--	--	--	--	--	--	--	NE	NE	100	NE	--
Butyl benzyl phthalate	<0.25	<0.31	--	<0.25	--	--	--	--	--	--	--	--	NE	NE	100	NE	--
2-Chloronaphthalene	<0.25	<0.31	--	<0.25	--	--	--	--	--	--	--	--	NE	NE	1000	NE	--
4-Chloroaniline	<0.51	<0.62	--	<0.51	--	--	--	--	--	--	--	--	NE	NE	1	400	--
Chrysene	**0.6**	**1.9**	--	**2.1**	--	--	--	--	--	--	--	--	70	70	70	10,000	--
bis(2-Chloroethoxy)methane	<0.25	<0.31	--	<0.25	--	--	--	--	--	--	--	--	NE	NE	500	NE	--
bis(2-Chloroethyl)ether	<0.25	<0.31	--	<0.25	--	--	--	--	--	--	--	--	0.7	2	0.7	800	--
bis(2-Chloroisopropyl)ether	<0.25	<0.31	--	<0.25	--	--	--	--	--	--	--	--	0.7	30	0.7	10,000	--
1,2-Dichlorobenzene	<0.25	<0.31	--	<0.25	--	--	--	--	--	--	--	--	100	30	9	10,000	--
1,2-Diphenylhydrazine	<0.25	<0.31	--	<0.25	--	--	--	--	--	--	--	--	NE	NE	50	NE	--
1,3-Dichlorobenzene	<0.25	<0.31	--	<0.25	--	--	--	--	--	--	--	--	100	100	3	5,000	--
1,4-Dichlorobenzene	<0.25	<0.31	--	<0.25	--	--	--	--	--	--	--	--	1	80	0.7	10,000	--
2,4-Dinitrotoluene	<0.51	<0.62	--	<0.51	--	--	--	--	--	--	--	--	2	2	0.7	800	--
2,6-Dinitrotoluene	<0.51	<0.62	--	<0.51	--	--	--	--	--	--	--	--	NE	NE	100	NE	--
3,3'-Dichlorobenzidine	<0.51	<0.62	--	<0.51	--	--	--	--	--	--	--	--	3	3	3	1,000	--
Dibenzo(a,h)anthracene	**0.2**	**0.3**	--	**0.3**	--	--	--	--	--	--	--	--	0.7	0.7	0.7	300	--
Dibenzofuran	<0.10	<0.12	--	**0.2**	--	--	--	--	--	--	--	--	NE	NE	100	NE	--
Di-n-butyl phthalate	<0.25	<0.31	--	<0.25	--	--	--	--	--	--	--	--	NE	NE	50	NE	--
Di-n-octyl phthalate	<0.25	<0.31	--	<0.25	--	--	--	--	--	--	--	--	NE	NE	1000	NE	--
Diethyl phthalate	<0.25	<0.31	--	<0.25	--	--	--	--	--	--	--	--	200	300	10	10,000	--
Dimethyl phthalate	<0.25	<0.31	--	<0.25	--	--	--	--	--	--	--	--	50	600	0.7	10,000	--
bis(2-Ethylhexyl)phthalate	<0.25	<0.31	--	<0.25	--	--	--	--	--	--	--	--	90	90	90	10,000	--
Fluoranthene	**1.0**	**3.6**	--	**5.7**	--	--	--	--	--	--	--	--	1000	1000	1000	10,000	--
Fluorene	<0.10	<0.12	--	**0.2**	--	--	--	--	--	--	--	--	1000	1000	1000	10,000	--
Hexachlorobenzene	<0.25	<0.31	--	<0.25	--	--	--	--	--	--	--	--	0.7	0.7	0.7	8	--
Hexachlorobutadiene	<0.25	<0.31	--	<0.25	--	--	--	--	--	--	--	--	30	30	30	1,000	--
Hexachlorocyclopentadiene	<0.51	<0.62	--	<0.51	--	--	--	--	--	--	--	--	NE	NE	50	NE	--
Hexachloroethane	<0.25	<0.31	--	<0.25	--	--	--	--	--	--	--	--	3	50	0.7	2,000	--
Indeno(1,2,3-cd)pyrene	**0.7**	**1.1**	--	**1.1**	--	--	--	--	--	--	--	--	7	7	7	3,000	--
Isophorone	<0.25	<0.31	--	<0.25	--	--	--	--	--	--	--	--	NE	NE	100	NE	--
2-Methylnaphthalene	<0.10	<0.12	--	<0.10	--	--	--	--	--	--	--	--	80	300	0.7	5,000	--
Naphthalene	<0.10	<0.12	--	**0.2**	--	--	--	--	--	--	--	--	20	500	4	10,000	--
Nitrobenzene	<0.25	<0.31	--	<0.25	--	--	--	--	--	--	--	--	NE	NE	500	NE	--
N-Nitroso-di-n-propylamine	<0.25	<0.31	--	<0.25	--	--	--	--	--	--	--	--	NE	NE	50	NE	--
N-Nitrosodiphenylamine	<0.25	<0.31	--	<0.25	--	--	--	--	--	--	--	--	NE	NE	100	NE	--
Phenanthrene	**0.3**	**1.3**	--	**3.4**	--	--	--	--	--	--	--	--	500	500	10	10,000	--
Pyrene	**1.1**	**3.5**	--	**5.4**	--	--	--	--	--	--	--	--	1000	1000	1000	10,000	--
1,2,4-Trichlorobenzene	<0.25	<0.31	--	<0.25	--	--	--	--	--	--	--	--	6	700	2	10,000	--
TOTAL PETROLEUM HYDROCARBONS - GASOLINE RANGE ORGANICS 8015 (mg/kg)																	
TPH-GRO (VOA)	--	--	--	--	--	--	--	--	--	--	--	--	NE	NE	NE	NE	--
PESTICIDES 8081B (mg/kg)																	
Aldrin	--	--	--	--	--	--	--	--	--	--	--	--	0.08	0.08	0.08	30	--
alpha-BHC	--	--	--	--	--	--	--	--	--	--	--	--	NE	NE	50	NE	--
beta-BHC	--	--	--	--	--	--	--	--	--	--	--	--	NE	NE	10	NE	--
delta-BHC	--	--	--	--	--	--	--	--	--	--	--	--	NE	NE	10	NE	--
gamma-BHC (Lindane)	--	--	--	--	--	--	--	--	--	--	--	--	1	0.5	0.003	600	--
Chlordane	--	--	--	--	--	--	--	--	--	--	--	--	5	5	5	600	--
Dieldrin	--	--	--	--	--	--	--	--	--	--	--	--	0.08	0.08	0.08	30	--
4,4'-DDD	--	--	--	--	--	--	--	--	--	--	--	--	8	8	8	600	--
4,4'-DDE	--	--	--	--	--	--	--	--	--	--	--	--	6	6	6	600	--
4,4'-DDT	--	--	--	--	--	--	--	--	--	--	--	--	6	6	6	600	--
Endrin	--	--	--	--	--	--	--	--	--	--	--	--	10	10	10	200	--
Endosulfan sulfate	--	--	--	--	--	--	--	--	--	--	--	--	NE	NE	NE	NE	--
Endosulfan-I	--	--	--	--	--	--	--	--	--	--	--	--	300	1	0.5	5,000	--
Endosulfan-II	--	--	--	--	--	--	--	--	--	--	--	--	300	1	0.5	5,000	--
Heptachlor	--	--	--	--	--	--	--	--	--	--	--	--	0.3	0.3	0.3	100	--
Heptachlor epoxide	--	--	--	--	--	--	--	--	--	--	--	--	0.1	0.1	0.1	10	--
Hexachlorobenzene	--	--	--	--	--	--	--	--	--	--	--	--	0.7	0.7	0.7	8	--
Methoxychlor	--	--	--	--	--	--	--	--	--	--	--	--	200	200	200	4,000	--
Endrin ketone	--	--	--	--	--	--	--	--	--	--	--	--	NE	NE	NE	NE	--
POLYCHLORINATED BIPHENYLS 8082A (mg/kg)																	
Aroclor 1016	<0.034	<0.040	--	<0.033	--	--	--	--	--	--	--	--	1	1	1	100	--
Aroclor 1221	<0.034	<0.040	--	<0.033	--	--	--	--	--	--	--	--	1	1	1	100	--
Aroclor 1232	<0.034	<0.040	--	<0.033	--	--	--	--	--	--	--	--	1	1	1	100	--
Aroclor 1242	<0.034	<0.040	--	<0.033	--	--	--	--	--	--	--	--	1	1	1	100	--
Aroclor 1248	<0.034	<0.040	--	<0.033	--	--	--	--	--	--	--	--	1	1	1	100	--
Aroclor 1254	<0.034	<0.040	--	<0.033	--	--	--	--	--	--	--	--	1	1	1	100	--
Aroclor 1260	<0.034	<0.040	--	<0.033	--	--	--	--	--	--	--	--	1	1	1	100	--
Aroclor 1262	<0.034	<0.040	--	<0.033	--	--	--	--	--	--	--	--	1	1	1	100	--
Aroclor 1268	<0.034	<0.040	--	<0.033	--	--	--	--	--	--	--	--	1	1	1	100	--
HERBICIDES 8151 (mg/kg)																	
2,4-D	--	--	--	--	--	--	--	--	--	--	--	--	NE	NE	NE	NE	--
2,4,5-TP (Silvex)	--	--	--	--	--	--	--	--	--	--	--	--	NE	NE	NE	NE	--
2,4,5-T	--	--	--	--	--	--	--	--	--	--	--	--	NE	NE	NE	NE	--
TOTAL PETROLEUM HYDROCARBONS - DIESEL RANGE ORGANICS 8015 (mg/kg)																	
TPH-DRO (Semi-VOA)	--	--	--	--	--	--	--	--	--	--	--	--	NE	NE	NE	NE	--
TOTAL METALS (mg/kg)																	
Antimony	<0.88	<0.95	<0.99	<0.83	<0.96	<0.90	<0.96	<0.95	--	--	--	--	20	20	20	300	--
Arsenic	**5.7**	**13.5**	**15.9**	**5.9**	**1.5**	**2.2**	**12.9**	**12**	--	--	--	--	20	20	20	500	--
Barium	**21.8**	**195**	**189**	**20.7**	**11.8**	**22.9**	**95.3**	**121**	--	--	--	--	1,000	1,000	1000	10,000	--
Beryllium	**0.4**	**0.9**	**1.2**	<0.33	<0.38	<0.36	**0.8**	**0.8**	--	--	--	--	90	90	90	2,000	--
Cadmium	<0.35	**0.5**	<0.40	<0.33	<0.38	<0.36	<0.38	<0.38	--	--	--	--	70	70	70	1,000	--
Chromium	**12.9**	**40.4**	**77.2**	**9.9**	**9.7**	**13.5**	**48.5**	**53.5**	--	--	--	--	100	100	100	2,000	--
Lead	**9.1**	**431**	**18.1**	**28.3**	**2.8**	**4.1**	**11.4**	**12.8**	--	--	--	--	200	200	200	6,000	--
Mercury	<0.033	**3.0**	<0.038	<0.031	<0.033	<0.034	<0.035	<0.035	--	--	--	--	20	20	20	300	--
Nickel	**10.7**	**30.0**	**54.3**	**7.8**	**7.5**	**11.5**	**33.5**	**39.6**	--	--	--	--	600	600	20	10,000	--
Selenium	<0.88	<0.95	<2.0	<0.83	<0.96	<0.90	<0.96	<0.95	--	--	--	--	400	400	400	7,000	--
Silver	<0.44	<0.48	<0.99	<0.41	<0.48	<0.45	<0.48	<0.48	--	--	--	--	100	100	100	2,000	--
Thallium	<0.88	<0.95	<0.99	<0.83	<0.96	<0.90	<0.96	<0.95	--	--	--	--	8	8	8	800	--
Vanadium	**18.8**	**50.0**	**75.2**	**14.5**	**14.0**	**18.5**	**55.6**	**81.8**	--	--	--	--	400	400	400	7,000	--
Zinc	**25.9**	**245**	**98.2**	**35.4**	**25.9**	**28.3**	**88.5**	**78.0**	--	--	--	--	1,000	1,000	1000	10,000	--
TCLP Metals																	
Lead	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5
General Chemistry																	
Cyanide Reactivity	<1.6	<1.9	--	<1.5	--	--	--	--	--	--	--	--	--	--	--	--	--
Ignitability (Flashpoint)	>230	>230	--	>230	--	--	--	--	--	--	--	--	--	--	--	--	--
Solids, Percent	**94.4**	**80**	**74**	**97.8**	**84.1**	**87.2**	**79.9**	**79.4**	--	--	--	--	--	--	--	--	--
Specific Conductivity	**180**	**378**	--	**255**	--	--	--	--	--	--	--	--	--	--	--	--	--
Sulfide Reactivity	<53	<62	--	<51	--	--	--	--	--	--	--	--	--	--	--	--	--
pH	**7.1**	**10.0**	--	**8.8**	--	--	--	--	--	--	--	--	--	--	--	--	--

NOTES:

-- is analysis not performed.
NE is not established.
ND is not detected
su is standard units.
°F is degrees Farenheit.

mg/kg is milligrams per kilogram
mg/L is milligrams per liter
PID is photoionization detector.
ppmv is parts per million by volume.
µmhos/cm is micromhos per centimeter

SVOC is semi-volatile organic compound
<2.0 indicates not detected at or above the laboratory reporting limit of 2.0 mg/kg.
Analytes detected above the method reporting limit are in **Bold**
Analytes detected above MCP Reportable Concentrations are in Red.

TABLE 5

SUMMARY OF SOIL ANALYTICAL DATA - ALL OTHER ANALYSES

Maggiore Somerville
343-351 Summer Street
Somerville, Massachusetts

Sample Date	August 12, 2016					March 28, 2017						MCP Method 1 Soil Standards (mg/kg)		MCP Reportable Concentrations (mg/kg)	MCP Method 3 Upper Concentration Limits (mg/kg)	TCLP Regulatory Level (mg/kg)
Sample ID	S-5	S-6	S-7	S-8	Stockpile	PC-1 0-15' COMP	PC-1 0-5'	PC-1 10-15'	PC-1 5-10'	PC-2 0-15' COMP	PC-2 0-5'	S-1				
Depth (feet)	7	5	6	6	NA	0-15	0-5	10-15	5-10	0-15	0-5	GW-2	GW-3	RCS-1		
PID (ppmv)	BDL	BDL	BDL	BDL	225.1	BDL	BDL	BDL	BDL	BDL	BDL					
SEMI-VOLATILE ORGANIC COMPOUNDS 8270D (mg/kg)																
Benzoic acid	--	--	--	--	<16	<0.57	--	--	--	<0.59	--	NE	NE	1000	NE	--
2-Chlorophenol	--	--	--	--	<8.0	<0.28	--	--	--	<0.30	--	100	100	0.7	3,000	--
4-Chloro-3-methyl phenol	--	--	--	--	<16	<0.57	--	--	--	<0.59	--	NE	NE	1000	NE	--
2,4-Dichlorophenol	--	--	--	--	<16	<0.57	--	--	--	<0.59	--	60	40	0.7	8,000	--
2,4-Dimethylphenol	--	--	--	--	<16	<0.57	--	--	--	<0.59	--	100	500	0.7	10,000	--
2,4-Dinitrophenol	--	--	--	--	<16	<0.57	--	--	--	<0.59	--	50	50	3	8,000	--
2-Methylphenol	--	--	--	--	<16	<0.57	--	--	--	<0.59	--	NE	NE	500	NE	--
3&4 Methylphenol	--	--	--	--	<16	<0.57	--	--	--	<0.59	--	NE	NE	500	NE	--
2-Nitrophenol	--	--	--	--	<16	<0.57	--	--	--	<0.59	--	NE	NE	100	NE	--
4-Nitrophenol	--	--	--	--	<16	<0.57	--	--	--	<0.59	--	NE	NE	100	NE	--
Pentachlorophenol	--	--	--	--	<16	<0.57	--	--	--	<0.59	--	3	3	3	700	--
Phenol	--	--	--	--	<8.0	<0.28	--	--	--	<0.30	--	50	20	1	10,000	--
2,4,5-Trichlorophenol	--	--	--	--	<16	<0.57	--	--	--	<0.59	--	1000	600	4	10,000	--
2,4,6-Trichlorophenol	--	--	--	--	<16	<0.57	--	--	--	<0.59	--	20	20	0.7	4,000	--
Acenaphthene	--	--	--	--	<3.2	**1.1**	--	--	--	<0.12	--	1000	1000	4	10,000	--
Acenaphthylene	--	--	--	--	<3.2	0.705	--	--	--	<0.12	--	600	10	1	10,000	--
Acetophenone	--	--	--	--	<16	<0.57	--	--	--	<0.59	--	NE	NE	1000	NE	--
Aniline	--	--	--	--	<16	<0.57	--	--	--	<0.59	--	NE	NE	1000	NE	--
Anthracene	--	--	--	--	**5.4**	**5**	--	--	--	**0.209**	--	1000	1000	1000	10,000	--
Benzo(a)anthracene	--	--	--	--	**14.9**	**11.8**	--	--	--	**0.828**	--	7	7	7	3,000	--
Benzo(a)pyrene	--	--	--	--	**13.8**	**9.02**	--	--	--	**0.58**	--	2	2	2	300	--
Benzo(b)fluoranthene	--	--	--	--	**11.7**	**9**	--	--	--	0.436	--	7	7	7	3,000	--
Benzo(g,h,i)perylene	--	--	--	--	**9.2**	**4.92**	--	--	--	0.361	--	1000	1000	1000	10,000	--
Benzo(k)fluoranthene	--	--	--	--	**10.9**	**5.68**	--	--	--	**0.5**	--	70	70	70	10,000	--
4-Bromophenyl phenyl ether	--	--	--	--	<8.0	<0.28	--	--	--	<0.30	--	NE	NE	100	NE	--
Butyl benzyl phthalate	--	--	--	--	<8.0	<0.28	--	--	--	<0.30	--	NE	NE	100	NE	--
2-Chloronaphthalene	--	--	--	--	<8.0	<0.28	--	--	--	<0.30	--	NE	NE	1000	NE	--
4-Chloroaniline	--	--	--	--	<16	<0.57	--	--	--	<0.59	--	NE	NE	1	400	--
Chrysene	--	--	--	--	**13.8**	**10.2**	--	--	--	0.542	--	70	70	70	10,000	--
bis(2-Chloroethoxy)methane	--	--	--	--	<8.0	<0.28	--	--	--	<0.30	--	NE	NE	500	NE	--
bis(2-Chloroethyl)ether	--	--	--	--	<8.0	<0.28	--	--	--	<0.30	--	0.7	2	0.7	800	--
bis(2-Chloroisopropyl)ether	--	--	--	--	<8.0	<0.28	--	--	--	<0.30	--	0.7	30	0.7	10,000	--
1,2-Dichlorobenzene	--	--	--	--	<8.0	<0.28	--	--	--	<0.30	--	100	30	9	10,000	--
1,2-Diphenylhydrazine	--	--	--	--	<8.0	<0.28	--	--	--	<0.30	--	NE	NE	50	NE	--
1,3-Dichlorobenzene	--	--	--	--	<8.0	<0.28	--	--	--	<0.30	--	100	100	3	5,000	--
1,4-Dichlorobenzene	--	--	--	--	<8.0	<0.28	--	--	--	<0.30	--	1	80	0.7	10,000	--
2,4-Dinitrotoluene	--	--	--	--	<16	<0.57	--	--	--	<0.59	--	2	2	0.7	800	--
2,6-Dinitrotoluene	--	--	--	--	<16	<0.57	--	--	--	<0.59	--	NE	NE	100	NE	--
3,3'-Dichlorobenzidine	--	--	--	--	<16	<0.57	--	--	--	<0.59	--	3	3	3	1,000	--
Dibenzo(a,h)anthracene	--	--	--	--	**3.5**	**2.08**	--	--	--	<0.12	--	0.7	0.7	0.7	300	--
Dibenzofuran	--	--	--	--	<3.2	**1.06**	--	--	--	<0.12	--	NE	NE	100	NE	--
Di-n-butyl phthalate	--	--	--	--	<8.0	<0.28	--	--	--	<0.30	--	NE	NE	50	NE	--
Di-n-octyl phthalate	--	--	--	--	<8.0	<0.28	--	--	--	<0.30	--	NE	NE	1000	NE	--
Diethyl phthalate	--	--	--	--	<8.0	<0.28	--	--	--	<0.30	--	200	300	10	10,000	--
Dimethyl phthalate	--	--	--	--	<8.0	<0.28	--	--	--	<0.30	--	50	600	0.7	10,000	--
bis(2-Ethylhexyl)phthalate	--	--	--	--	<8.0	<0.28	--	--	--	<0.30	--	90	90	90	10,000	--
Fluoranthene	--	--	--	--	**33.8**	**27.8**	--	--	--	**1.27**	--	1000	1000	1000	10,000	--
Fluorene	--	--	--	--	<3.2	**1.71**	--	--	--	<0.12	--	1000	1000	1000	10,000	--
Hexachlorobenzene	--	--	--	--	<8.0	<0.28	--	--	--	<0.30	--	0.7	0.7	0.7	8	--
Hexachlorobutadiene	--	--	--	--	<8.0	<0.28	--	--	--	<0.30	--	30	30	30	1,000	--
Hexachlorocyclopentadiene	--	--	--	--	<16	<0.57	--	--	--	<0.59	--	NE	NE	50	NE	--
Hexachloroethane	--	--	--	--	<8.0	<0.28	--	--	--	<0.30	--	3	50	0.7	2,000	--
Indeno(1,2,3-cd)pyrene	--	--	--	--	**9.8**	**5.73**	--	--	--	**0.394**	--	7	7	7	3,000	--
Isophorone	--	--	--	--	<8.0	<0.28	--	--	--	<0.30	--	NE	NE	100	NE	--
2-Methylnaphthalene	--	--	--	--	**59.4**	0.249	--	--	--	<0.12	--	80	300	0.7	5,000	--
Naphthalene	--	--	--	--	**48.3**	**0.517**	--	--	--	<0.12	--	20	500	4	10,000	--
Nitrobenzene	--	--	--	--	<8.0	<0.28	--	--	--	<0.30	--	NE	NE	500	NE	--
N-Nitroso-di-n-propylamine	--	--	--	--	<8.0	<0.28	--	--	--	<0.30	--	NE	NE	50	NE	--
N-Nitrosodiphenylamine	--	--	--	--	<8.0	<0.28	--	--	--	<0.30	--	NE	NE	100	NE	--
Phenanthrene	--	--	--	--	**18.9**	**20.8**	--	--	--	**0.781**	--	500	500	10	10,000	--
Pyrene	--	--	--	--	**28**	**21.9**	--	--	--	**1.17**	--	1000	1000	1000	10,000	--
1,2,4-Trichlorobenzene	--	--	--	--	<8.0	<0.28	--	--	--	<0.30	--	6	700	2	10,000	--
TOTAL PETROLEUM HYDROCARBONS - GASOLINE RANGE ORGANICS 8015 (mg/kg)																
TPH-GRO (VOA)	--	--	--	--	--	<5.8	--	--	--	<7.2	--	NE	NE	NE	NE	--
PESTICIDES 8081B (mg/kg)																
Aldrin	--	--	--	--	--	<0.0056	--	--	--	<0.0060	--	0.08	0.08	0.08	30	--
alpha-BHC	--	--	--	--	--	<0.0056	--	--	--	<0.0060	--	NE	NE	50	NE	--
beta-BHC	--	--	--	--	--	<0.0056	--	--	--	<0.0060	--	NE	NE	10	NE	--
delta-BHC	--	--	--	--	--	<0.0056	--	--	--	<0.0060	--	NE	NE	10	NE	--
gamma-BHC (Lindane)	--	--	--	--	--	<0.0030	--	--	--	<0.0030	--	1	0.5	0.003	600	--
Chlordane	--	--	--	--	--	<0.056	--	--	--	<0.060	--	5	5	5	600	--
Dieldrin	--	--	--	--	--	<0.0056	--	--	--	<0.0060	--	0.08	0.08	0.08	30	--
4,4'-DDD	--	--	--	--	--	<0.0056	--	--	--	<0.0060	--	8	8	8	600	--
4,4'-DDE	--	--	--	--	--	<0.0056	--	--	--	<0.0060	--	6	6	6	600	--
4,4'-DDT	--	--	--	--	--	<0.0056	--	--	--	<0.0060	--	6	6	6	600	--
Endrin	--	--	--	--	--	<0.0056	--	--	--	<0.0060	--	10	10	10	200	--
Endosulfan sulfate	--	--	--	--	--	<0.0056	--	--	--	<0.0060	--	NE	NE	NE	NE	--
Endosulfan-I	--	--	--	--	--	<0.0056	--	--	--	<0.0060	--	300	1	0.5	5,000	--
Endosulfan-II	--	--	--	--	--	<0.0056	--	--	--	<0.0060	--	300	1	0.5	5,000	--
Heptachlor	--	--	--	--	--	<0.0056	--	--	--	<0.0060	--	0.3	0.3	0.3	100	--
Heptachlor epoxide	--	--	--	--	--	<0.0056	--	--	--	<0.0060	--	0.1	0.1	0.1	10	--
Hexachlorobenzene	--	--	--	--	--	<0.0056	--	--	--	<0.0060	--	0.7	0.7	0.7	8	--
Methoxychlor	--	--	--	--	--	<0.0056	--	--	--	<0.0060	--	200	200	200	4,000	--
Endrin ketone	--	--	--	--	--	<0.0056	--	--	--	<0.0060	--	NE	NE	NE	NE	--
POLYCHLORINATED BIPHENYLS 8082A (mg/kg)																
Aroclor 1016	--	--	--	--	<0.035	<0.028	--	--	--	<0.030	--	1	1	1	100	--
Aroclor 1221	--	--	--	--	<0.035	<0.028	--	--	--	<0.030	--	1	1	1	100	--
Aroclor 1232	--	--	--	--	<0.035	<0.028	--	--	--	<0.030	--	1	1	1	100	--
Aroclor 1242	--	--	--	--	<0.035	<0.028	--	--	--	<0.030	--	1	1	1	100	--
Aroclor 1248	--	--	--	--	<0.035	<0.028	--	--	--	<0.030	--	1	1	1	100	--
Aroclor 1254	--	--	--	--	<0.035	<0.028	--	--	--	<0.030	--	1	1	1	100	--
Aroclor 1260	--	--	--	--	**0.1**	<0.028	--	--	--	<0.030	--	1	1	1	100	--
Aroclor 1262	--	--	--	--	<0.035	<0.028	--	--	--	<0.030	--	1	1	1	100	--
Aroclor 1268	--	--	--	--	<0.035	<0.028	--	--	--	<0.030	--	1	1	1	100	--
HERBICIDES 8151 (mg/kg)																
2,4-D	--	--	--	--	--	<0.019	--	--	--	<0.019	--	NE	NE	NE	NE	--
2,4,5-TP (Silvex)	--	--	--	--	--	<0.0037	--	--	--	<0.0039	--	NE	NE	NE	NE	--
2,4,5-T	--	--	--	--	--	<0.0037	--	--	--	<0.0039	--	NE	NE	NE	NE	--
TOTAL PETROLEUM HYDROCARBONS - DIESEL RANGE ORGANICS 8015 (mg/kg)																
TPH-DRO (Semi-VOA)	--	--	--	--	--	**197**	--	--	--	**26.5**	--	NE	NE	NE	NE	--
TOTAL METALS (mg/kg)																
Antimony	--	--	--	--	<0.88	--	--	--	--	--	--	20	20	20	300	--
Arsenic	--	--	--	--	**12.0**	**3.2**	-	-	-	**5.8**	-	20	20	20	500	--
Barium	--	--	--	--	**100**	**54.1**	-	-	-	**31.9**	-	1,000	1,000	1000	10,000	--
Beryllium	--	--	--	--	**0.8**	-	-	-	-	-	-	90	90	90	2,000	--
Cadmium	--	--	--	--	**0.7**	<0.58	-	-	-	<0.63	-	70	70	70	1,000	--
Chromium	--	--	--	--	**22.8**	**23.9**	-	-	-	**18.5**	-	100	100	100	2,000	--
Lead	--	--	--	--	**350**	**48.3**	**88.9**	**9.8**	**17.7**	**8.7**	**23.9**	200	200	200	6,000	--
Mercury	--	--	--	--	<0.032	<0.036	-	-	-	<0.040	-	20	20	20	300	--
Nickel	--	--	--	--	**18.1**	-	-	-	-	-	-	600	600	20	10,000	--
Selenium	--	--	--	--	<0.88	<2.3	-	-	-	<2.5	-	400	400	400	7,000	--
Silver	--	--	--	--	<0.88	**0.98**	-	-	-	**0.71**	-	100	100	100	2,000	--
Thallium	--	--	--	--	<0.88	-	-	-	-	-	-	8	8	8	800	--
Vanadium	--	--	--	--	**32.8**	-	-	-	-	-	-	400	400	400	7,000	--
Zinc	--	--	--	--	**188**	-	-	-	-	-	-	1,000	1,000	1000	10,000	--
TCLP Metals																
Lead	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5
General Chemistry																
Cyanide Reactivity	--	--	--	--	<1.6	<11	--	--	--	<12	--	--	--	--	--	--
Ignitability (Flashpoint)	--	--	--	--	>230	>200	--	--	--	>200	--	--	--	--	--	--
Solids, Percent	--	--	--	--	**90.9**	**85.5**	**82.8**	**79.8**	**90.5**	**81.4**	**83.2**	--	--	--	--	--
Specific Conductivity	--	--	--	--	**260**	**195**	--	--	--	**144**	--	--	--	--	--	--
Sulfide Reactivity	--	--	--	--	<54	<110	--	--	--	<120	--	--	--	--	--	--
pH	--	--	--	--	**7.8**	**7.58**	--	--	--	**7.6**	--	--	--	--	--	--

NOTES:

-- is analysis not performed	mg/kg is milligrams per kilogram	SVOC is semi-volatile organic compound.
NE is not established	mg/L is milligrams per liter	<2.0 indicates not detected at or above the laboratory reporting limit of 2.0 mg/kg.
ND is not detected.	PID is photoionization detector.	Analytes detected above the method reporting limit are in **Bold**
su is standard units.	ppmv is parts per million by volume.	Analytes detected above MCP Reportable Concentrations are in **Red**
°F is degrees Farenheit.	µmhos/cm is micromhos per centimeter	

TABLE 5

SUMMARY OF SOIL ANALYTICAL DATA - ALL OTHER ANALYSES

Maggiore Somerville
343-351 Summer Street
Somerville, Massachusetts

Sample Date	March 28, 2017											MCP Method 1 Soil Standards (mg/kg)		MCP Reportable Concentrations (mg/kg)	MCP Method 3 Upper Concentration Limits (mg/kg)	TCLP Regulatory Level (mg/kg)
Sample ID	PC-2 10-15'	PC-2 5-10'	PC-3 0-15' COMP	PC-3 0-5'	PC-3 10-15'	PC-3 5-10'	PC-4 0-15' COMP	PC-4 0-5'	PC-4 10-15'	PC-4 5-10'	PC-5 0-15' COMP	S-1				
Depth (feet)	10-15	5-10	0-15	0-5	10-15	5-10	0-15	0-5	10-15	5-10	0-15	GW-2	GW-3	RCS-1		
PID (ppmv)	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL					
SEMI-VOLATILE ORGANIC COMPOUNDS 8270D (mg/kg)																
Benzoic acid	--	--	<0.57	--	--	--	<0.61	--	--	--	<0.60	NE	NE	1000	NE	--
2-Chlorophenol	--	--	<0.29	--	--	--	<0.30	--	--	--	<0.30	100	100	0.7	3,000	--
4-Chloro-3-methyl phenol	--	--	<0.57	--	--	--	<0.61	--	--	--	<0.60	NE	NE	1000	NE	--
2,4-Dichlorophenol	--	--	<0.57	--	--	--	<0.61	--	--	--	<0.60	60	40	0.7	8,000	--
2,4-Dimethylphenol	--	--	<0.57	--	--	--	<0.61	--	--	--	<0.60	100	500	0.7	10,000	--
2,4-Dinitrophenol	--	--	<0.57	--	--	--	<0.61	--	--	--	<0.60	50	50	3	8,000	--
2-Methylphenol	--	--	<0.57	--	--	--	<0.61	--	--	--	<0.60	NE	NE	500	NE	--
3&4-Methylphenol	--	--	<0.57	--	--	--	<0.61	--	--	--	<0.60	NE	NE	500	NE	--
2-Nitrophenol	--	--	<0.57	--	--	--	<0.61	--	--	--	<0.60	NE	NE	100	NE	--
4-Nitrophenol	--	--	<0.57	--	--	--	<0.61	--	--	--	<0.60	NE	NE	100	NE	--
Pentachlorophenol	--	--	<0.57	--	--	--	<0.61	--	--	--	<0.60	3	3	3	700	--
Phenol	--	--	<0.29	--	--	--	<0.30	--	--	--	<0.30	50	20	1	10,000	--
2,4,5-Trichlorophenol	--	--	<0.57	--	--	--	<0.61	--	--	--	<0.60	1000	600	4	10,000	--
2,4,6-Trichlorophenol	--	--	<0.57	--	--	--	<0.61	--	--	--	<0.60	20	20	0.7	4,000	--
Acenaphthene	--	--	<0.11	--	--	--	**0.907**	--	--	--	**0.184**	1000	1000	4	10,000	--
Acenaphthylene	--	--	**0.127**	--	--	--	**2.65**	--	--	--	**0.485**	600	10	1	10,000	--
Acetophenone	--	--	<0.57	--	--	--	<0.61	--	--	--	<0.60	NE	NE	1000	NE	--
Aniline	--	--	<0.57	--	--	--	<0.61	--	--	--	<0.60	NE	NE	1000	NE	--
Anthracene	--	--	**0.3**	--	--	--	**5.5**	--	--	--	**0.529**	1000	1000	1000	10,000	--
Benzo(a)anthracene	--	--	**1.31**	--	--	--	**10.8**	--	--	--	**2.17**	7	7	7	3,000	--
Benzo(a)pyrene	--	--	**1.27**	--	--	--	**7.7**	--	--	--	**2.04**	2	2	2	300	--
Benzo(b)fluoranthene	--	--	**0.944**	--	--	--	**7.33**	--	--	--	**1.74**	7	7	7	3,000	--
Benzo(g,h,i)perylene	--	--	**0.709**	--	--	--	**3.81**	--	--	--	**1.24**	1000	1000	1000	10,000	--
Benzo(k)fluoranthene	--	--	**0.939**	--	--	--	**5.68**	--	--	--	**1.74**	70	70	70	10,000	--
4-Bromophenyl phenyl ether	--	--	<0.29	--	--	--	<0.30	--	--	--	<0.30	NE	NE	100	NE	--
Butyl benzyl phthalate	--	--	<0.29	--	--	--	<0.30	--	--	--	<0.30	NE	NE	100	NE	--
2-Chloronaphthalene	--	--	<0.29	--	--	--	<0.30	--	--	--	<0.30	NE	NE	1000	NE	--
4-Chloroaniline	--	--	<0.57	--	--	--	<0.61	--	--	--	<0.60	NE	NE	1	400	--
Chrysene	--	--	**1.13**	--	--	--	**10**	--	--	--	**2.16**	70	70	70	10,000	--
bis(2-Chloroethoxy)methane	--	--	<0.29	--	--	--	<0.30	--	--	--	<0.30	NE	NE	500	NE	--
bis(2-Chloroethyl)ether	--	--	<0.29	--	--	--	<0.30	--	--	--	<0.30	0.7	2	0.7	800	--
bis(2-Chloroisopropyl)ether	--	--	<0.29	--	--	--	<0.30	--	--	--	<0.30	0.7	30	0.7	10,000	--
1,2-Dichlorobenzene	--	--	<0.29	--	--	--	<0.30	--	--	--	<0.30	100	30	9	10,000	--
1,2-Diphenylhydrazine	--	--	<0.29	--	--	--	<0.30	--	--	--	<0.30	NE	NE	50	NE	--
1,3-Dichlorobenzene	--	--	<0.29	--	--	--	<0.30	--	--	--	<0.30	100	100	3	5,000	--
1,4-Dichlorobenzene	--	--	<0.29	--	--	--	<0.30	--	--	--	<0.30	1	80	0.7	10,000	--
2,4-Dinitrotoluene	--	--	<0.57	--	--	--	<0.61	--	--	--	<0.60	2	2	0.7	800	--
2,6-Dinitrotoluene	--	--	<0.57	--	--	--	<0.61	--	--	--	<0.60	NE	NE	100	NE	--
3,3'-Dichlorobenzidine	--	--	<0.57	--	--	--	<0.61	--	--	--	<0.60	3	3	3	1,000	--
Dibenzo(a,h)anthracene	--	--	**0.191**	--	--	--	**1.57**	--	--	--	**0.428**	0.7	0.7	0.7	300	--
Dibenzofuran	--	--	<0.11	--	--	--	**2.12**	--	--	--	**0.128**	NE	NE	100	NE	--
Di-n-butyl phthalate	--	--	<0.29	--	--	--	<0.30	--	--	--	<0.30	NE	NE	50	NE	--
Di-n-octyl phthalate	--	--	<0.29	--	--	--	<0.30	--	--	--	<0.30	NE	NE	1000	NE	--
Diethyl phthalate	--	--	<0.29	--	--	--	<0.30	--	--	--	<0.30	200	300	10	10,000	--
Dimethyl phthalate	--	--	<0.29	--	--	--	<0.30	--	--	--	<0.30	50	600	0.7	10,000	--
bis(2-Ethylhexyl)phthalate	--	--	<0.29	--	--	--	<0.30	--	--	--	<0.30	90	90	90	10,000	--
Fluoranthene	--	--	**2.43**	--	--	--	**29.4**	--	--	--	**4.11**	1000	1000	1000	10,000	--
Fluorene	--	--	<0.11	--	--	--	**4.59**	--	--	--	**0.194**	1000	1000	1000	10,000	--
Hexachlorobenzene	--	--	<0.29	--	--	--	<0.30	--	--	--	<0.30	0.7	0.7	0.7	8	--
Hexachlorobutadiene	--	--	<0.29	--	--	--	<0.30	--	--	--	<0.30	30	30	30	1,000	--
Hexachlorocyclopentadiene	--	--	<0.57	--	--	--	<0.61	--	--	--	<0.60	NE	NE	50	NE	--
Hexachloroethane	--	--	<0.29	--	--	--	<0.30	--	--	--	<0.30	3	50	0.7	2,000	--
Indeno(1,2,3-cd)pyrene	--	--	**0.762**	--	--	--	**4.71**	--	--	--	**1.39**	7	7	7	3,000	--
Isophorone	--	--	<0.29	--	--	--	<0.30	--	--	--	<0.30	NE	NE	100	NE	--
2-Methylnaphthalene	--	--	<0.11	--	--	--	**0.463**	--	--	--	<0.12	80	300	0.7	5,000	--
Naphthalene	--	--	<0.11	--	--	--	**0.259**	--	--	--	<0.12	20	500	4	10,000	--
Nitrobenzene	--	--	<0.29	--	--	--	<0.30	--	--	--	<0.30	NE	NE	500	NE	--
N-Nitroso-di-n-propylamine	--	--	<0.29	--	--	--	<0.30	--	--	--	<0.30	NE	NE	50	NE	--
N-Nitrosodiphenylamine	--	--	<0.29	--	--	--	<0.30	--	--	--	<0.30	NE	NE	100	NE	--
Phenanthrene	--	--	**1.04**	--	--	--	**33.5**	--	--	--	**2.4**	500	500	10	10,000	--
Pyrene	--	--	**2.49**	--	--	--	**23**	--	--	--	**3.91**	1000	1000	1000	10,000	--
1,2,4-Trichlorobenzene	--	--	<0.29	--	--	--	<0.30	--	--	--	<0.30	6	700	2	10,000	--
TOTAL PETROLEUM HYDROCARBONS - GASOLINE RANGE ORGANICS 8015 (mg/kg)																
TPH-GRO (VOA)	--	--	<7.2	--	--	--	<8.0	--	--	--	<8.0	NE	NE	NE	NE	--
PESTICIDES 8081B (mg/kg)																
Aldrin	--	--	<0.0057	--	--	--	<0.0061	--	--	--	<0.0062	0.08	0.08	0.08	30	--
alpha-BHC	--	--	<0.0057	--	--	--	<0.0061	--	--	--	<0.0062	NE	NE	50	NE	--
beta-BHC	--	--	<0.0057	--	--	--	<0.0061	--	--	--	<0.0062	NE	NE	10	NE	--
delta-BHC	--	--	<0.0057	--	--	--	<0.0061	--	--	--	<0.0062	NE	NE	10	NE	--
gamma-BHC (Lindane)	--	--	<0.0030	--	--	--	<0.0030	--	--	--	<0.0030	1	0.5	0.003	600	--
Chlordane	--	--	<0.057	--	--	--	<0.061	--	--	--	<0.062	5	5	5	600	--
Dieldrin	--	--	<0.0057	--	--	--	<0.0061	--	--	--	<0.0062	0.08	0.08	0.08	30	--
4,4'-DDD	--	--	<0.0057	--	--	--	<0.0061	--	--	--	<0.0062	8	8	8	600	--
4,4'-DDE	--	--	<0.0057	--	--	--	<0.0061	--	--	--	<0.0062	6	6	6	600	--
4,4'-DDT	--	--	<0.0057	--	--	--	**0.0103**	--	--	--	<0.0062	6	6	6	600	--
Endrin	--	--	<0.0057	--	--	--	<0.0061	--	--	--	<0.0062	10	10	10	200	--
Endosulfan sulfate	--	--	<0.0057	--	--	--	<0.0061	--	--	--	<0.0062	NE	NE	NE	NE	--
Endosulfan-I	--	--	<0.0057	--	--	--	<0.0061	--	--	--	<0.0062	300	1	0.5	5,000	--
Endosulfan-II	--	--	<0.0057	--	--	--	<0.0061	--	--	--	<0.0062	300	1	0.5	5,000	--
Heptachlor	--	--	<0.0057	--	--	--	<0.0061	--	--	--	<0.0062	0.3	0.3	0.3	100	--
Heptachlor epoxide	--	--	<0.0057	--	--	--	<0.0061	--	--	--	<0.0062	0.1	0.1	0.1	10	--
Hexachlorobenzene	--	--	<0.0057	--	--	--	<0.0061	--	--	--	<0.0062	0.7	0.7	0.7	8	--
Methoxychlor	--	--	<0.0057	--	--	--	<0.0061	--	--	--	<0.0062	200	200	200	4,000	--
Endrin ketone	--	--	<0.0057	--	--	--	<0.0061	--	--	--	<0.0062	NE	NE	NE	NE	--
POLYCHLORINATED BIPHENYLS 8082A (mg/kg)																
Aroclor 1016	--	--	<0.029	--	--	--	<0.031	--	--	--	<0.031	1	1	1	100	--
Aroclor 1221	--	--	<0.029	--	--	--	<0.031	--	--	--	<0.031	1	1	1	100	--
Aroclor 1232	--	--	<0.029	--	--	--	<0.031	--	--	--	<0.031	1	1	1	100	--
Aroclor 1242	--	--	<0.029	--	--	--	<0.031	--	--	--	<0.031	1	1	1	100	--
Aroclor 1248	--	--	<0.029	--	--	--	<0.031	--	--	--	<0.031	1	1	1	100	--
Aroclor 1254	--	--	<0.029	--	--	--	<0.031	--	--	--	<0.031	1	1	1	100	--
Aroclor 1260	--	--	<0.029	--	--	--	<0.031	--	--	--	<0.031	1	1	1	100	--
Aroclor 1262	--	--	<0.029	--	--	--	<0.031	--	--	--	<0.031	1	1	1	100	--
Aroclor 1268	--	--	<0.029	--	--	--	<0.031	--	--	--	<0.031	1	1	1	100	--
HERBICIDES 8151 (mg/kg)																
2,4-D	--	--	<0.019	--	--	--	<0.020	-	-	-	<0.020	NE	NE	NE	NE	--
2,4,5-TP (Silvex)	--	--	<0.0039	--	--	--	<0.0041	-	-	-	<0.0039	NE	NE	NE	NE	--
2,4,5-T	--	--	<0.0039	--	--	--	<0.0041	-	-	-	<0.0039	NE	NE	NE	NE	--
TOTAL PETROLEUM HYDROCARBONS - DIESEL RANGE ORGANICS 8015 (mg/kg)																
TPH-DRO (Semi-VOA)	--	--	**135**	--	--	--	**207**	-	-	-	**58.4**	NE	NE	NE	NE	--
TOTAL METALS (mg/kg)																
Antimony	--	--	--	--	--	--	--	--	--	--	--	20	20	20	300	--
Arsenic	-	-	**7.1**	-	-	-	**10.4**	-	-	-	**12.4**	20	20	20	500	--
Barium	-	-	**66.6**	-	-	-	**100**	-	-	-	**103**	1,000	1,000	1000	10,000	--
Beryllium	-	-	-	-	-	-	-	-	-	-		90	90	90	2,000	--
Cadmium	-	-	<0.57	-	-	-	<0.67	-	-	-	<0.64	70	70	70	1,000	--
Chromium	-	-	**27.1**	-	-	-	**36.6**	-	-	-	**40.6**	100	100	100	2,000	--
Lead	**11.2**	**6.4**	**44.7**	**20.1**	**11.3**	**8.6**	**83.5**	**99.9**	**16.8**	**22.7**	**56.6**	200	200	200	6,000	--
Mercury	-	-	<0.039	-	-	-	**0.058**	-	-	-	**0.51**	20	20	20	300	--
Nickel	-	-	-	-	-	-	-	-	-	-	-	600	600	20	10,000	--
Selenium	-	-	<2.3	-	-	-	<2.7	-	-	-	<2.6	400	400	400	7,000	--
Silver	-	-	**0.85**	-	-	-	**0.75**	-	-	-	<0.64	100	100	100	2,000	--
Thallium	-	-	-	-	-	-	-	-	-	-	-	8	8	8	800	--
Vanadium	-	-	-	-	-	-	-	-	-	-	-	400	400	400	7,000	--
Zinc	-	-	-	-	-	-	-	-	-	-	-	1,000	1,000	1000	10,000	--
TCLP Metals																
Lead	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5
General Chemistry																
Cyanide Reactivity	--	--	<12	--	--	--	<12	--	--	--	<12	--	--	--	--	--
Ignitability (Flashpoint)	--	--	>200	--	--	--	>200	--	--	--	>200	--	--	--	--	--
Solids, Percent	**80.4**	**86**	**84.1**	**86.6**	**77.2**	**85**	**78.7**	**89.9**	**70.2**	**80.6**	**79**	--	--	--	--	--
Specific Conductivity	--	--	**241**	--	--	--	**367**	--	--	--	**812**	--	--	--	--	--
Sulfide Reactivity	--	--	<120	--	--	--	<120	--	--	--	<120	--	--	--	--	--
pH	--	--	**8.72**	--	--	--	**8.1**	--	--	--	**7.88**	--	--	--	--	--

NOTES:

-- is analysis not performed	mg/kg is milligrams per kilogram.	SVOC is semi-volatile organic compound
NE is not established.	mg/L is milligrams per liter.	<2.0 indicates not detected at or above the laboratory reporting limit of 2.0 mg/kg
ND is not detected	PID is photoionization detector	Analytes detected above the method reporting limit are in **Bold**.
su is standard units.	ppmv is parts per million by volume.	Analytes detected above MCP Reportable Concentrations are in **Red**.
°F is degrees Farenheit.	μmhos/cm is micromhos per centimeter	

TABLE 5

SUMMARY OF SOIL ANALYTICAL DATA - ALL OTHER ANALYSES

Maggiore Somerville
343-351 Summer Street
Somerville, Massachusetts

Sample Date	March 28, 2017											MCP Method 1 Soil Standards (mg/kg)		MCP Reportable Concentrations (mg/kg)	MCP Method 3 Upper Concentration Limits (mg/kg)	TCLP Regulatory Level (mg/kg)
												S-1				
Sample ID	PC-5 0-5'	PC-5 10-15'	PC-5 5-10'	PC-6 0-15' COMP	PC-6 0-5'	PC-6 10-15'	PC-6 5-10'	PC-7 0-15' COMP	PC-7 0-5'	PC-7 10-15'	PC-7 5-10'					
Depth (feet)	0-5	10-15	5-10	0-15	0-5	10-15	5-10	0-15	0-5	10-15	5-10					
PID (ppmv)	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	GW-2	GW-3	RCS-1		
SEMI-VOLATILE ORGANIC COMPOUNDS 8270D (mg/kg)																
Benzoic acid	--	--	--	<0.56	--	--	--	<0.58	--	--	--	NE	NE	1000	NE	--
2-Chlorophenol	--	--	--	<0.28	--	--	--	<0.29	--	--	--	100	100	0.7	3,000	--
4-Chloro-3-methyl phenol	--	--	--	<0.56	--	--	--	<0.58	--	--	--	NE	NE	1000	NE	--
2,4-Dichlorophenol	--	--	--	<0.56	--	--	--	<0.58	--	--	--	60	40	0.7	8,000	--
2,4-Dimethylphenol	--	--	--	<0.56	--	--	--	<0.58	--	--	--	100	500	0.7	10,000	--
2,4-Dinitrophenol	--	--	--	<0.56	--	--	--	<0.58	--	--	--	50	50	3	8,000	--
2-Methylphenol	--	--	--	<0.56	--	--	--	<0.58	--	--	--	NE	NE	500	NE	--
3&4-Methylphenol	--	--	--	<0.56	--	--	--	<0.58	--	--	--	NE	NE	500	NE	--
2-Nitrophenol	--	--	--	<0.56	--	--	--	<0.58	--	--	--	NE	NE	100	NE	--
4-Nitrophenol	--	--	--	<0.56	--	--	--	<0.58	--	--	--	NE	NE	100	NE	--
Pentachlorophenol	--	--	--	<0.56	--	--	--	<0.58	--	--	--	3	3	3	700	--
Phenol	--	--	--	<0.28	--	--	--	<0.29	--	--	--	50	20	1	10,000	--
2,4,5-Trichlorophenol	--	--	--	<0.56	--	--	--	<0.58	--	--	--	1000	600	4	10,000	--
2,4,6-Trichlorophenol	--	--	--	<0.56	--	--	--	<0.58	--	--	--	20	20	0.7	4,000	--
Acenaphthene	--	--	--	**0.892**	--	--	--	<0.12	--	--	--	1000	1000	4	10,000	--
Acenaphthylene	--	--	--	**1.09**	--	--	--	<0.12	--	--	--	600	10	1	10,000	--
Acetophenone	--	--	--	<0.56	--	--	--	<0.58	--	--	--	NE	NE	1000	NE	--
Aniline	--	--	--	<0.56	--	--	--	<0.58	--	--	--	NE	NE	1000	NE	--
Anthracene	--	--	--	**2.3**	--	--	--	<0.12	--	--	--	1000	1000	1000	10,000	--
Benzo(a)anthracene	--	--	--	**7.87**	--	--	--	<0.12	--	--	--	7	7	7	3,000	--
Benzo(a)pyrene	--	--	--	**8.75**	--	--	--	<0.29	--	--	--	2	2	2	300	--
Benzo(b)fluoranthene	--	--	--	**8.03**	--	--	--	<0.12	--	--	--	7	7	7	3,000	--
Benzo(g,h,i)perylene	--	--	--	**5.18**	--	--	--	<0.12	--	--	--	1000	1000	1000	10,000	--
Benzo(k)fluoranthene	--	--	--	**4.56**	--	--	--	<0.12	--	--	--	70	70	70	10,000	--
4-Bromophenyl phenyl ether	--	--	--	<0.28	--	--	--	<0.29	--	--	--	NE	NE	100	NE	--
Butyl benzyl phthalate	--	--	--	<0.28	--	--	--	<0.29	--	--	--	NE	NE	100	NE	--
2-Chloronaphthalene	--	--	--	<0.28	--	--	--	<0.29	--	--	--	NE	NE	1000	NE	--
4-Chloroaniline	--	--	--	<0.56	--	--	--	<0.58	--	--	--	NE	NE	1	400	--
Chrysene	--	--	--	**8.43**	--	--	--	<0.12	--	--	--	70	70	70	10,000	--
bis(2-Chloroethoxy)methane	--	--	--	<0.28	--	--	--	<0.29	--	--	--	NE	NE	500	NE	--
bis(2-Chloroethyl)ether	--	--	--	<0.28	--	--	--	<0.29	--	--	--	0.7	2	0.7	800	--
bis(2-Chloroisopropyl)ether	--	--	--	<0.28	--	--	--	<0.29	--	--	--	0.7	30	0.7	10,000	--
1,2-Dichlorobenzene	--	--	--	<0.28	--	--	--	<0.29	--	--	--	100	30	9	10,000	--
1,2-Diphenylhydrazine	--	--	--	<0.28	--	--	--	<0.29	--	--	--	NE	NE	50	NE	--
1,3-Dichlorobenzene	--	--	--	<0.28	--	--	--	<0.29	--	--	--	100	100	3	5,000	--
1,4-Dichlorobenzene	--	--	--	<0.28	--	--	--	<0.29	--	--	--	1	80	0.7	10,000	--
2,4-Dinitrotoluene	--	--	--	<0.56	--	--	--	<0.58	--	--	--	2	2	0.7	800	--
2,6-Dinitrotoluene	--	--	--	<0.56	--	--	--	<0.58	--	--	--	NE	NE	100	NE	--
3,3'-Dichlorobenzidine	--	--	--	<0.56	--	--	--	<0.58	--	--	--	3	3	3	1,000	--
Dibenzo(a,h)anthracene	--	--	--	**1.49**	--	--	--	<0.12	--	--	--	0.7	0.7	0.7	300	--
Dibenzofuran	--	--	--	<0.11	--	--	--	<0.12	--	--	--	NE	NE	100	NE	--
Di-n-butyl phthalate	--	--	--	<0.28	--	--	--	<0.29	--	--	--	NE	NE	50	NE	--
Di-n-octyl phthalate	--	--	--	<0.28	--	--	--	<0.29	--	--	--	NE	NE	1000	NE	--
Diethyl phthalate	--	--	--	<0.28	--	--	--	<0.29	--	--	--	200	300	10	10,000	--
Dimethyl phthalate	--	--	--	<0.28	--	--	--	<0.29	--	--	--	50	600	0.7	10,000	--
bis(2-Ethylhexyl)phthalate	--	--	--	<0.28	--	--	--	<0.29	--	--	--	90	90	90	10,000	--
Fluoranthene	--	--	--	**21.6**	--	--	--	**0.254**	--	--	--	1000	1000	1000	10,000	--
Fluorene	--	--	--	**0.866**	--	--	--	<0.12	--	--	--	1000	1000	1000	10,000	--
Hexachlorobenzene	--	--	--	<0.28	--	--	--	<0.29	--	--	--	0.7	0.7	0.7	8	--
Hexachlorobutadiene	--	--	--	<0.28	--	--	--	<0.29	--	--	--	30	30	30	1,000	--
Hexachlorocyclopentadiene	--	--	--	<0.56	--	--	--	<0.58	--	--	--	NE	NE	50	NE	--
Hexachloroethane	--	--	--	<0.28	--	--	--	<0.29	--	--	--	3	50	0.7	2,000	--
Indeno(1,2,3-cd)pyrene	--	--	--	**5.47**	--	--	--	<0.29	--	--	--	7	7	7	3,000	--
Isophorone	--	--	--	<0.28	--	--	--	<0.29	--	--	--	NE	NE	100	NE	--
2-Methylnaphthalene	--	--	--	**0.329**	--	--	--	<0.12	--	--	--	80	300	0.7	5,000	--
Naphthalene	--	--	--	**0.706**	--	--	--	<0.12	--	--	--	20	500	4	10,000	--
Nitrobenzene	--	--	--	<0.28	--	--	--	<0.29	--	--	--	NE	NE	500	NE	--
N-Nitroso-di-n-propylamine	--	--	--	<0.28	--	--	--	<0.29	--	--	--	NE	NE	50	NE	--
N-Nitrosodiphenylamine	--	--	--	<0.28	--	--	--	<0.29	--	--	--	NE	NE	100	NE	--
Phenanthrene	--	--	--	**15.1**	--	--	--	**0.136**	--	--	--	500	500	10	10,000	--
Pyrene	--	--	--	**20**	--	--	--	**0.238**	--	--	--	1000	1000	1000	10,000	--
1,2,4-Trichlorobenzene	--	--	--	<0.28	--	--	--	<0.29	--	--	--	6	700	2	10,000	--
TOTAL PETROLEUM HYDROCARBONS - GASOLINE RANGE ORGANICS 8015 (mg/kg)																
TPH-GRO (VOA)	--	--	--	<6.9	--	--	--	<7.0	--	--	--	NE	NE	NE	NE	--
PESTICIDES 8081B (mg/kg)																
Aldrin	--	--	--	<0.0056	--	--	--	<0.0058	--	--	--	0.08	0.08	0.08	30	--
alpha-BHC	--	--	--	<0.0056	--	--	--	<0.0058	--	--	--	NE	NE	50	NE	--
beta-BHC	--	--	--	<0.0056	--	--	--	<0.0058	--	--	--	NE	NE	10	NE	--
delta-BHC	--	--	--	<0.0056	--	--	--	<0.0058	--	--	--	NE	NE	10	NE	--
gamma-BHC (Lindane)	--	--	--	<0.0030	--	--	--	<0.0030	--	--	--	1	0.5	0.003	600	--
Chlordane	--	--	--	<0.056	--	--	--	<0.058	--	--	--	5	5	5	600	--
Dieldrin	--	--	--	<0.0056	--	--	--	<0.0058	--	--	--	0.08	0.08	0.08	30	--
4,4'-DDD	--	--	--	<0.0056	--	--	--	<0.0058	--	--	--	8	8	8	600	--
4,4'-DDE	--	--	--	<0.0056	--	--	--	<0.0058	--	--	--	6	6	6	600	--
4,4'-DDT	--	--	--	**0.0449**	--	--	--	<0.0058	--	--	--	6	6	6	600	--
Endrin	--	--	--	<0.0056	--	--	--	<0.0058	--	--	--	10	10	10	200	--
Endosulfan sulfate	--	--	--	<0.0056	--	--	--	<0.0058	--	--	--	NE	NE	NE	NE	--
Endosulfan-I	--	--	--	<0.0056	--	--	--	<0.0058	--	--	--	300	1	0.5	5,000	--
Endosulfan-II	--	--	--	<0.0056	--	--	--	<0.0058	--	--	--	300	1	0.5	5,000	--
Heptachlor	--	--	--	<0.0056	--	--	--	<0.0058	--	--	--	0.3	0.3	0.3	100	--
Heptachlor epoxide	--	--	--	<0.0056	--	--	--	<0.0058	--	--	--	0.1	0.1	0.1	10	--
Hexachlorobenzene	--	--	--	<0.0056	--	--	--	<0.0058	--	--	--	0.7	0.7	0.7	8	--
Methoxychlor	--	--	--	<0.0056	--	--	--	<0.0058	--	--	--	200	200	200	4,000	--
Endrin ketone	--	--	--	<0.0056	--	--	--	<0.0058	--	--	--	NE	NE	NE	NE	--
POLYCHLORINATED BIPHENYLS 8082A (mg/kg)																
Aroclor 1016	--	--	--	<0.028	--	--	--	<0.029	--	--	--	1	1	1	100	--
Aroclor 1221	--	--	--	<0.028	--	--	--	<0.029	--	--	--	1	1	1	100	--
Aroclor 1232	--	--	--	<0.028	--	--	--	<0.029	--	--	--	1	1	1	100	--
Aroclor 1242	--	--	--	<0.028	--	--	--	<0.029	--	--	--	1	1	1	100	--
Aroclor 1248	--	--	--	<0.028	--	--	--	<0.029	--	--	--	1	1	1	100	--
Aroclor 1254	--	--	--	<0.028	--	--	--	<0.029	--	--	--	1	1	1	100	--
Aroclor 1260	--	--	--	<0.028	--	--	--	<0.029	--	--	--	1	1	1	100	--
Aroclor 1262	--	--	--	<0.028	--	--	--	<0.029	--	--	--	1	1	1	100	--
Aroclor 1268	--	--	--	<0.028	--	--	--	<0.029	--	--	--	1	1	1	100	--
HERBICIDES 8151 (mg/kg)																
2,4-D	-	-	-	<0.018	-	-	-	<0.020	-	-	-	NE	NE	NE	NE	--
2,4,5-TP (Silvex)	-	-	-	<0.0036	-	-	-	<0.0039	-	-	-	NE	NE	NE	NE	--
2,4,5-T	-	-	-	<0.0036	-	-	-	<0.0039	-	-	-	NE	NE	NE	NE	--
TOTAL PETROLEUM HYDROCARBONS - DIESEL RANGE ORGANICS 8015 (mg/kg)																
TPH-DRO (Semi-VOA)	-	-	-	**423**	-	-	-	ND (19)	-	-	-	NE	NE	NE	NE	--
TOTAL METALS (mg/kg)																
Antimony	--	--	--	--	--	--	--	--	--	--	--	20	20	20	300	--
Arsenic	-	-	-	**4.3**	-	-	-	**9.2**	-	-	-	20	20	20	500	--
Barium	-	-	-	**58**	-	-	-	**56.2**	-	-	-	1,000	1,000	1000	10,000	--
Beryllium	-	-	-	-	-	-	-	-	-	-	-	90	90	90	2,000	--
Cadmium	-	-	-	<0.59	-	-	-	<0.60	-	-	-	70	70	70	1,000	--
Chromium	-	-	-	**17.7**	-	-	-	23	-	-	-	100	100	100	2,000	--
Lead	**128**	**18.9**	**13.2**	**24.2**	**67.4**	**10**	**2.5**	**40.7**	**158**	**5.7**	**4.2**	200	200	200	6,000	--
Mercury	-	-	-	<0.036	-	-	-	**0.099**	-	-	-	20	20	20	300	--
Nickel	-	-	-	-	-	-	-	-	-	-	-	600	600	20	10,000	--
Selenium	-	-	-	<2.4	-	-	-	<2.4	-	-	-	400	400	400	7,000	--
Silver	-	-	-	<0.59	-	-	-	**2.5**	-	-	-	100	100	100	2,000	--
Thallium	-	-	-	-	-	-	-	-	-	-	-	8	8	8	800	--
Vanadium	-	-	-	-	-	-	-	-	-	-	-	400	400	400	7,000	--
Zinc	-	-	-	-	-	-	-	-	-	-	-	1,000	1,000	1000	10,000	--
TCLP Metals																
Lead	<0.50	--	--	--	--	--	--	--	<0.50	--	--	--	--	--	--	5
General Chemistry																
Cyanide Reactivity	--	--	--	<11	--	--	--	<11	--	--	--	--	--	--	--	--
Ignitability (Flashpoint)	--	--	--	>200	--	--	--	>200	--	--	--	--	--	--	--	--
Solids, Percent	**88**	**82.4**	**79.1**	**87.2**	**84.4**	**81.4**	**93.4**	**83**	**83.4**	**85.2**	**89**	--	--	--	--	--
Specific Conductivity	--	--	--	**189**	--	--	--	**311**	--	--	--	--	--	--	--	--
Sulfide Reactivity	--	--	--	<110	--	--	--	<110	--	--	--	--	--	--	--	--
pH	--	--	--	**7.33**	--	--	--	**7.83**	--	--	--	--	--	--	--	--

NOTES:

-- is analysis not performed	mg/kg is milligrams per kilogram	SVOC is semi-volatile organic compound
NE is not established	mg/L is milligrams per liter	<2.0 indicates not detected at or above the laboratory reporting limit of 2.0 mg/kg.
ND is not detected	PID is photoionization detector	Analytes detected above the method reporting limit are in **Bold**
su is standard units.	ppmv is parts per million by volume	Analytes detected above MCP Reportable Concentrations are in **Red**
°F is degrees Farenheit.	µmhos/cm is micromhos per centimeter	

TABLE 5
SUMMARY OF SOIL ANALYTICAL DATA - ALL OTHER ANALYSES

Maggiore Somerville
343-351 Summer Street
Somerville, Massachusetts

Sample Date	March 28, 2017										MCP Method 1 Soil Standards (mg/kg)		MCP Reportable Concentrations (mg/kg)	MCP Method 3 Upper Concentration Limits (mg/kg)	TCLP Regulatory Level (mg/kg)
Sample ID	PC-8 0-15' COMP	PC-8 0-5'	PC-8 10-15'	PC-8 5-10'	PC-9 0-15' COMP	PC-9 0-5'	PC-9 10-15'	PC-9 5-10'	PC-10 0-15' COMP	PC-10 0-5'	S-1				
Depth (feet)	0-15	0-5	10-15	5-10	0-15	0-5	10-15	5-10	0-15	0-5	GW-2	GW-3	RCS-1		
PID (ppmv)	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL					
SEMI-VOLATILE ORGANIC COMPOUNDS 8270D (mg/kg)															
Benzoic acid	<0.56	--	--	--	<0.59	--	--	--	<0.60	--	NE	NE	1000	NE	--
2-Chlorophenol	<0.28	--	--	--	<0.29	--	--	--	<0.30	--	100	100	0.7	3,000	--
4-Chloro-3 methyl phenol	<0.56	--	--	--	<0.59	--	--	--	<0.60	--	NE	NE	1000	NE	--
2,4-Dichlorophenol	<0.56	--	--	--	<0.59	--	--	--	<0.60	--	60	40	0.7	8,000	--
2,4-Dimethylphenol	<0.56	--	--	--	<0.59	--	--	--	<0.60	--	100	500	0.7	10,000	--
2,4-Dinitrophenol	<0.56	--	--	--	<0.59	--	--	--	<0.60	--	50	50	3	8,000	--
2-Methylphenol	<0.56	--	--	--	<0.59	--	--	--	<0.60	--	NE	NE	500	NE	--
3&4-Methylphenol	<0.56	--	--	--	<0.59	--	--	--	<0.60	--	NE	NE	500	NE	--
2-Nitrophenol	<0.56	--	--	--	<0.59	--	--	--	<0.60	--	NE	NE	100	NE	--
4-Nitrophenol	<0.56	--	--	--	<0.59	--	--	--	<0.60	--	NE	NE	100	NE	--
Pentachlorophenol	<0.56	--	--	--	<0.59	--	--	--	<0.60	--	3	3	3	700	--
Phenol	<0.28	--	--	--	<0.29	--	--	--	<0.30	--	50	20	1	10,000	--
2,4,5-Trichlorophenol	<0.56	--	--	--	<0.59	--	--	--	<0.60	--	1000	600	4	10,000	--
2,4,6-Trichlorophenol	<0.56	--	--	--	<0.59	--	--	--	<0.60	--	20	20	0.7	4,000	--
Acenaphthene	**0.213**	--	--	--	<0.12	--	--	--	<0.12	--	1000	1000	4	10,000	--
Acenaphthylene	<0.11	--	--	--	<0.12	--	--	--	**0.401**	--	600	10	1	10,000	--
Acetophenone	<0.56	--	--	--	<0.59	--	--	--	<0.60	--	NE	NE	1000	NE	--
Aniline	<0.56	--	--	--	<0.59	--	--	--	<0.60	--	NE	NE	1000	NE	--
Anthracene	**0.49**	--	--	--	**0.122**	--	--	--	**0.389**	--	1000	1000	1000	10,000	--
Benzo(a)anthracene	**1.32**	--	--	--	**0.413**	--	--	--	**1.29**	--	7	7	7	3,000	--
Benzo(a)pyrene	**1.27**	--	--	--	**0.43**	--	--	--	**1.31**	--	2	2	2	300	--
Benzo(b)fluoranthene	0.981	--	--	--	**0.388**	--	--	--	**0.999**	--	7	7	7	3,000	--
Benzo(g,h,i)perylene	**0.7**	--	--	--	**0.303**	--	--	--	**0.788**	--	1000	1000	1000	10,000	--
Benzo(k)fluoranthene	**0.979**	--	--	--	**0.355**	--	--	--	**1.08**	--	70	70	70	10,000	--
4-Bromophenyl phenyl ether	<0.28	--	--	--	<0.29	--	--	--	<0.30	--	NE	NE	100	NE	--
Butyl benzyl phthalate	<0.28	--	--	--	<0.29	--	--	--	<0.30	--	NE	NE	100	NE	--
2-Chloronaphthalene	<0.28	--	--	--	<0.29	--	--	--	<0.30	--	NE	NE	1000	NE	--
4-Chloroaniline	<0.56	--	--	--	<0.59	--	--	--	<0.60	--	NE	NE	1	400	--
Chrysene	**1.22**	--	--	--	**0.398**	--	--	--	**1.18**	--	70	70	70	10,000	--
bis(2-Chloroethoxy)methane	<0.28	--	--	--	<0.29	--	--	--	<0.30	--	NE	NE	500	NE	--
bis(2-Chloroethyl)ether	<0.28	--	--	--	<0.29	--	--	--	<0.30	--	0.7	2	0.7	800	--
bis(2-Chloroisopropyl)ether	<0.28	--	--	--	<0.29	--	--	--	<0.30	--	0.7	30	0.7	10,000	--
1,2-Dichlorobenzene	<0.28	--	--	--	<0.29	--	--	--	<0.30	--	100	30	9	10,000	--
1,2-Diphenylhydrazine	<0.28	--	--	--	<0.29	--	--	--	<0.30	--	NE	NE	50	NE	--
1,3-Dichlorobenzene	<0.28	--	--	--	<0.29	--	--	--	<0.30	--	100	100	3	5,000	--
1,4-Dichlorobenzene	<0.28	--	--	--	<0.29	--	--	--	<0.30	--	1	80	0.7	10,000	--
2,4-Dinitrotoluene	<0.56	--	--	--	<0.59	--	--	--	<0.60	--	2	2	0.7	800	--
2,6-Dinitrotoluene	<0.56	--	--	--	<0.59	--	--	--	<0.60	--	NE	NE	100	NE	--
3,3'-Dichlorobenzidine	<0.56	--	--	--	<0.59	--	--	--	<0.60	--	3	3	3	1,000	--
Dibenzo(a,h)anthracene	**0.235**	--	--	--	<0.12	--	--	--	**0.255**	--	0.7	0.7	0.7	300	--
Dibenzofuran	**0.113**	--	--	--	<0.12	--	--	--	<0.12	--	NE	NE	100	NE	--
Di-n-butyl phthalate	<0.28	--	--	--	<0.29	--	--	--	<0.30	--	NE	NE	50	NE	--
Di-n-octyl phthalate	<0.28	--	--	--	<0.29	--	--	--	<0.30	--	NE	NE	1000	NE	--
Diethyl phthalate	<0.28	--	--	--	<0.29	--	--	--	<0.30	--	200	300	10	10,000	--
Dimethyl phthalate	<0.28	--	--	--	<0.29	--	--	--	<0.30	--	50	600	0.7	10,000	--
bis(2-Ethylhexyl)phthalate	<0.28	--	--	--	<0.29	--	--	--	<0.30	--	90	90	90	10,000	--
Fluoranthene	**2.94**	--	--	--	**0.712**	--	--	--	**2.21**	--	1000	1000	1000	10,000	--
Fluorene	**0.158**	--	--	--	<0.12	--	--	--	**0.142**	--	1000	1000	1000	10,000	--
Hexachlorobenzene	<0.28	--	--	--	<0.29	--	--	--	<0.30	--	0.7	0.7	0.7	8	--
Hexachlorobutadiene	<0.28	--	--	--	<0.29	--	--	--	<0.30	--	30	30	30	1,000	--
Hexachlorocyclopentadiene	<0.56	--	--	--	<0.59	--	--	--	<0.60	--	NE	NE	50	NE	--
Hexachloroethane	<0.28	--	--	--	<0.29	--	--	--	<0.30	--	3	50	0.7	2,000	--
Indeno(1,2,3-cd)pyrene	**0.812**	--	--	--	**0.309**	--	--	--	**0.881**	--	7	7	7	3,000	--
Isophorone	<0.28	--	--	--	<0.29	--	--	--	<0.30	--	NE	NE	100	NE	--
2-Methylnaphthalene	<0.11	--	--	--	<0.12	--	--	--	<0.12	--	80	300	0.7	5,000	--
Naphthalene	<0.11	--	--	--	<0.12	--	--	--	<0.12	--	20	500	4	10,000	--
Nitrobenzene	<0.28	--	--	--	<0.29	--	--	--	<0.30	--	NE	NE	500	NE	--
N-Nitroso-di-n-propylamine	<0.28	--	--	--	<0.29	--	--	--	<0.30	--	NE	NE	50	NE	--
N-Nitrosodiphenylamine	<0.28	--	--	--	<0.29	--	--	--	<0.30	--	NE	NE	100	NE	--
Phenanthrene	**2.29**	--	--	--	**0.388**	--	--	--	**1.12**	--	500	500	10	10,000	--
Pyrene	**2.74**	--	--	--	**0.725**	--	--	--	**1.99**	--	1000	1000	1000	10,000	--
1,2,4-Trichlorobenzene	<0.28	--	--	--	<0.29	--	--	--	<0.30	--	6	700	2	10,000	--
TOTAL PETROLEUM HYDROCARBONS - GASOLINE RANGE ORGANICS 8015 (mg/kg)															
TPH-GRO (VOA)	<6.7	--	--	--	<7.4	--	--	--	<6.9	--	NE	NE	NE	NE	--
PESTICIDES 8081B (mg/kg)															
Aldrin	<0.0057	--	--	--	<0.0058	--	--	--	<0.0057	--	0.08	0.08	0.08	30	--
alpha-BHC	<0.0057	--	--	--	<0.0058	--	--	--	<0.0057	--	NE	NE	50	NE	--
beta-BHC	<0.0057	--	--	--	<0.0058	--	--	--	<0.0057	--	NE	NE	10	NE	--
delta-BHC	<0.0057	--	--	--	<0.0058	--	--	--	<0.0057	--	NE	NE	10	NE	--
gamma-BHC (Lindane)	<0.0030	--	--	--	<0.0030	--	--	--	<0.0030	--	1	0.5	0.003	600	--
Chlordane	<0.057	--	--	--	<0.058	--	--	--	<0.057	--	5	5	5	600	--
Dieldrin	<0.0057	--	--	--	<0.0058	--	--	--	<0.0057	--	0.08	0.08	0.08	30	--
4,4'-DDD	<0.0057	--	--	--	<0.0058	--	--	--	<0.0057	--	8	8	8	600	--
4,4'-DDE	<0.0057	--	--	--	<0.0058	--	--	--	<0.0057	--	6	6	6	600	--
4,4'-DDT	**0.0087**	--	--	--	<0.0058	--	--	--	<0.0057	--	6	6	6	600	--
Endrin	<0.0057	--	--	--	<0.0058	--	--	--	<0.0057	--	10	10	10	200	--
Endosulfan sulfate	<0.0057	--	--	--	<0.0058	--	--	--	<0.0057	--	NE	NE	NE	NE	--
Endosulfan-I	<0.0057	--	--	--	<0.0058	--	--	--	<0.0057	--	300	1	0.5	5,000	--
Endosulfan-II	<0.0057	--	--	--	<0.0058	--	--	--	<0.0057	--	300	1	0.5	5,000	--
Heptachlor	<0.0057	--	--	--	<0.0058	--	--	--	<0.0057	--	0.3	0.3	0.3	100	--
Heptachlor epoxide	<0.0057	--	--	--	<0.0058	--	--	--	<0.0057	--	0.1	0.1	0.1	10	--
Hexachlorobenzene	<0.0057	--	--	--	<0.0058	--	--	--	<0.0057	--	0.7	0.7	0.7	8	--
Methoxychlor	<0.0057	--	--	--	<0.0058	--	--	--	<0.0057	--	200	200	200	4,000	--
Endrin ketone	<0.0057	--	--	--	<0.0058	--	--	--	<0.0057	--	NE	NE	NE	NE	--
POLYCHLORINATED BIPHENYLS 8082A (mg/kg)															
Aroclor 1016	<0.028	--	--	--	<0.029	--	--	--	<0.029	--	1	1	1	100	--
Aroclor 1221	<0.028	--	--	--	<0.029	--	--	--	<0.029	--	1	1	1	100	--
Aroclor 1232	<0.028	--	--	--	<0.029	--	--	--	<0.029	--	1	1	1	100	--
Aroclor 1242	<0.028	--	--	--	<0.029	--	--	--	<0.029	--	1	1	1	100	--
Aroclor 1248	<0.028	--	--	--	<0.029	--	--	--	<0.029	--	1	1	1	100	--
Aroclor 1254	<0.028	--	--	--	<0.029	--	--	--	<0.029	--	1	1	1	100	--
Aroclor 1260	<0.028	--	--	--	<0.029	--	--	--	<0.029	--	1	1	1	100	--
Aroclor 1262	<0.028	--	--	--	<0.029	--	--	--	<0.029	--	1	1	1	100	--
Aroclor 1268	<0.028	--	--	--	<0.029	--	--	--	<0.029	--	1	1	1	100	--
HERBICIDES 8151 (mg/kg)															
2,4-D	<0.017	-	-	-	<0.018	-	-	-	<0.018	-	NE	NE	NE	NE	--
2,4,5-TP (Silvex)	<0.0034	-	-	-	<0.0036	-	-	-	<0.0036	-	NE	NE	NE	NE	--
2,4,5-T	<0.0034	-	-	-	<0.0036	-	-	-	<0.0036	-	NE	NE	NE	NE	--
TOTAL PETROLEUM HYDROCARBONS - DIESEL RANGE ORGANICS 8015 (mg/kg)															
TPH-DRO (Semi-VOA)	**18.8**	-	-	-	**39.3**	-	-	-	**52.2**	-	NE	NE	NE	NE	--
TOTAL METALS (mg/kg)															
Antimony	--	--	--	--	--	--	--	--	--	--	20	20	20	300	--
Arsenic	**9**	-	-	-	**14.4**	-	-	-	**11.3**	-	20	20	20	500	--
Barium	**51.5**	-	-	-	**88.8**	-	-	-	**105**	-	1,000	1,000	1000	10,000	--
Beryllium	-	-	-	-	-	-	-	-	-	-	90	90	90	2,000	--
Cadmium	<0.55	-	-	-	<0.61	-	-	-	<0.58	-	70	70	70	1,000	--
Chromium	**23.4**	-	-	-	**28.9**	-	-	-	**45.5**	-	100	100	100	2,000	--
Lead	**40.2**	**104**	**12.9**	**2.9**	**31.6**	**28.2**	**11.5**	**28.2**	**19**	**28.60**	200	200	200	6,000	--
Mercury	**0.14**	-	-	-	**3.3**	-	-	-	**0.084**	-	20	20	20	300	--
Nickel	-	-	-	-	-	-	-	-	-	-	600	600	20	10,000	--
Selenium	<2.2	-	-	-	<2.4	-	-	-	<2.3	-	400	400	400	7,000	--
Silver	**2.4**	-	-	-	**2.8**	-	-	-	**2.7**	-	100	100	100	2,000	--
Thallium	-	-	-	-	-	-	-	-	-	-	8	8	8	800	--
Vanadium	-	-	-	-	-	-	-	-	-	-	400	400	400	7,000	--
Zinc	-	-	-	-	-	-	-	-	-	-	1,000	1,000	1000	10,000	--
TCLP Metals															
Lead	--	<0.50	--	--	--	--	--	--	--	--	--	--	--	--	5
General Chemistry															
Cyanide Reactivity	<11	--	--	--	<11	-	-	-	<11	-	--	--	--	--	--
Ignitability (Flashpoint)	>200	--	--	--	>200	--	--	--	>200	--	--	--	--	--	--
Solids, Percent	**87.1**	**76.4**	**79.5**	**91.5**	**83.9**	**87.1**	**75.9**	**85.4**	**83.2**	**85.3**	--	--	--	--	--
Specific Conductivity	**285**	--	--	--	**282**	--	--	--	**172**	--	--	--	--	--	--
Sulfide Reactivity	<110	--	--	--	<110	--	--	--	<110	--	--	--	--	--	--
pH	**7.89**	--	--	--	**8.06**	--	--	--	**7.67**	--	--	--	--	--	--

NOTES:

-- is analysis not performed	mg/kg is milligrams per kilogram.	SVOC is semi-volatile organic compound.
NE is not established	mg/L is milligrams per liter	<2.0 indicates not detected at or above the laboratory reporting limit of 2.0 mg/kg.
ND is not detected	PID is photoionization detector	Analytes detected above the method reporting limit are in **Bold**
su is standard units.	ppmv is parts per million by volume.	Analytes detected above MCP Reportable Concentrations are in Red.
°F is degrees Farenheit.	μmhos/cm is micromhos per centimeter	

TABLE 5
SUMMARY OF SOIL ANALYTICAL DATA - ALL OTHER ANALYSES

Maggiore Somerville
343-351 Summer Street
Somerville, Massachusetts

Sample Date	March 28, 2017										MCP Method 1 Soil Standards (mg/kg)		MCP Reportable Concentrations (mg/kg)	MCP Method 3 Upper Concentration Limits (mg/kg)	TCLP Regulatory Level (mg/kg)
Sample ID	PC-10 10-15'	PC-10 5-10'	PC-11 0-15' COMP	PC-11 0-5'	PC-11 10-15'	PC-11 5-10'	PC-12 0-15' COMP	PC-12 0-5'	PC-12 10-15'	PC-12 5-10'	S-1				
Depth (feet)	10-15	5-10	0-15	0-5	10-15	5-10	0-15	0-5	10-15	5-10					
PID (ppmv)	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	GW 2	GW-3	RCS-1		
SEMI-VOLATILE ORGANIC COMPOUNDS 8270D (mg/kg)															
Benzoic acid	--	--	<0.57	--	--	--	<0.57	--	--	--	NE	NE	1000	NE	--
2-Chlorophenol	--	--	<0.29	--	--	--	<0.29	--	--	--	100	100	0.7	3,000	--
4-Chloro-3-methyl phenol	--	--	<0.57	--	--	--	<0.57	--	--	--	NE	NE	1000	NE	--
2,4-Dichlorophenol	--	--	<0.57	--	--	--	<0.57	--	--	--	60	40	0.7	8,000	--
2,4-Dimethylphenol	--	--	<0.57	--	--	--	<0.57	--	--	--	100	500	0.7	10,000	--
2,4-Dinitrophenol	--	--	<0.57	--	--	--	<0.57	--	--	--	50	50	3	8,000	--
2 Methylphenol	--	--	<0.57	--	--	--	<0.57	--	--	--	NE	NE	500	NE	--
3&4-Methylphenol	--	--	<0.57	--	--	--	<0.57	--	--	--	NE	NE	500	NE	--
2-Nitrophenol	--	--	<0.57	--	--	--	<0.57	--	--	--	NE	NE	100	NE	--
4 Nitrophenol	--	--	<0.57	--	--	--	<0.57	--	--	--	NE	NE	100	NE	--
Pentachlorophenol	--	--	<0.57	--	--	--	<0.57	--	--	--	3	3	3	700	--
Phenol	--	--	<0.29	--	--	--	<0.29	--	--	--	50	20	1	10,000	--
2,4,5-Trichlorophenol	--	--	<0.57	--	--	--	<0.57	--	--	--	1000	600	4	10,000	--
2,4,6-Trichlorophenol	--	--	<0.57	--	--	--	<0.57	--	--	--	20	20	0.7	4,000	--
Acenaphthene	--	--	<0.11	--	--	--	<0.11	--	--	--	1000	1000	4	10,000	--
Acenaphthylene	--	--	<0.11	--	--	--	<0.11	--	--	--	600	10	1	10,000	--
Acetophenone	--	--	<0.57	--	--	--	<0.57	--	--	--	NE	NE	1000	NE	--
Aniline	--	--	<0.57	--	--	--	<0.57	--	--	--	NE	NE	1000	NE	--
Anthracene	--	--	<0.11	--	--	--	<0.11	--	--	--	1000	1000	1000	10,000	--
Benzo(a)anthracene	--	--	**0.123**	--	--	--	<0.11	--	--	--	7	7	7	3,000	--
Benzo(a)pyrene	--	--	<0.29	--	--	--	<0.29	--	--	--	2	2	2	300	--
Benzo(b)fluoranthene	--	--	<0.11	--	--	--	<0.11	--	--	--	7	7	7	3,000	--
Benzo(g,h,i)perylene	--	--	<0.11	--	--	--	<0.11	--	--	--	1000	1000	1000	10,000	--
Benzo(k)fluoranthene	--	--	**0.117**	--	--	--	<0.11	--	--	--	70	70	70	10,000	--
4-Bromophenyl phenyl ether	--	--	<0.29	--	--	--	<0.29	--	--	--	NE	NE	100	NE	--
Butyl benzyl phthalate	--	--	<0.29	--	--	--	<0.29	--	--	--	NE	NE	100	NE	--
2-Chloronaphthalene	--	--	<0.29	--	--	--	<0.29	--	--	--	NE	NE	1000	NE	--
4-Chloroaniline	--	--	<0.57	--	--	--	<0.57	--	--	--	NE	NE	1	400	--
Chrysene	--	--	**0.118**	--	--	--	**0.115**	--	--	--	70	70	70	10,000	--
bis(2-Chloroethoxy)methane	--	--	<0.29	--	--	--	<0.29	--	--	--	NE	NE	500	NE	--
bis(2-Chloroethyl)ether	--	--	<0.29	--	--	--	<0.29	--	--	--	0.7	2	0.7	800	--
bis(2-Chloroisopropyl)ether	--	--	<0.29	--	--	--	<0.29	--	--	--	0.7	30	0.7	10,000	--
1,2-Dichlorobenzene	--	--	<0.29	--	--	--	<0.29	--	--	--	100	30	9	10,000	--
1,2-Diphenylhydrazine	--	--	<0.29	--	--	--	<0.29	--	--	--	NE	NE	50	NE	--
1,3-Dichlorobenzene	--	--	<0.29	--	--	--	<0.29	--	--	--	100	100	3	5,000	--
1,4-Dichlorobenzene	--	--	<0.29	--	--	--	<0.29	--	--	--	1	80	0.7	10,000	--
2,4-Dinitrotoluene	--	--	<0.57	--	--	--	<0.57	--	--	--	2	2	0.7	800	--
2,6-Dinitrotoluene	--	--	<0.57	--	--	--	<0.57	--	--	--	NE	NE	100	NE	--
3,3'-Dichlorobenzidine	--	--	<0.57	--	--	--	<0.57	--	--	--	3	3	3	1,000	--
Dibenzo(a,h)anthracene	--	--	<0.11	--	--	--	<0.11	--	--	--	0.7	0.7	0.7	300	--
Dibenzofuran	--	--	<0.11	--	--	--	<0.11	--	--	--	NE	NE	100	NE	--
Di-n-butyl phthalate	--	--	<0.29	--	--	--	<0.29	--	--	--	NE	NE	50	NE	--
Di-n-octyl phthalate	--	--	<0.29	--	--	--	<0.29	--	--	--	NE	NE	1000	NE	--
Diethyl phthalate	--	--	<0.29	--	--	--	<0.29	--	--	--	200	300	10	10,000	--
Dimethyl phthalate	--	--	<0.29	--	--	--	<0.29	--	--	--	50	600	0.7	10,000	--
bis(2-Ethylhexyl)phthalate	--	--	<0.29	--	--	--	<0.29	--	--	--	90	90	90	10,000	--
Fluoranthene	--	--	**0.115**	--	--	--	**0.222**	--	--	--	1000	1000	1000	10,000	--
Fluorene	--	--	<0.11	--	--	--	<0.11	--	--	--	1000	1000	1000	10,000	--
Hexachlorobenzene	--	--	<0.29	--	--	--	<0.29	--	--	--	0.7	0.7	0.7	8	--
Hexachlorobutadiene	--	--	<0.29	--	--	--	<0.29	--	--	--	30	30	30	1,000	--
Hexachlorocyclopentadiene	--	--	<0.57	--	--	--	<0.57	--	--	--	NE	NE	50	NE	--
Hexachloroethane	--	--	<0.29	--	--	--	<0.29	--	--	--	3	50	0.7	2,000	--
Indeno(1,2,3-cd)pyrene	--	--	<0.29	--	--	--	<0.29	--	--	--	7	7	7	3,000	--
Isophorone	--	--	<0.29	--	--	--	<0.29	--	--	--	NE	NE	100	NE	--
2-Methylnaphthalene	--	--	<0.11	--	--	--	<0.11	--	--	--	80	300	0.7	5,000	--
Naphthalene	--	--	<0.11	--	--	--	<0.11	--	--	--	20	500	4	10,000	--
Nitrobenzene	--	--	<0.29	--	--	--	<0.29	--	--	--	NE	NE	500	NE	--
N-Nitroso-di-n-propylamine	--	--	<0.29	--	--	--	<0.29	--	--	--	NE	NE	50	NE	--
N-Nitrosodiphenylamine	--	--	<0.29	--	--	--	<0.29	--	--	--	NE	NE	100	NE	--
Phenanthrene	--	--	<0.11	--	--	--	**0.127**	--	--	--	500	500	10	10,000	--
Pyrene	--	--	**0.123**	--	--	--	**0.209**	--	--	--	1000	1000	1000	10,000	--
1,2,4-Trichlorobenzene	--	--	<0.29	--	--	--	<0.29	--	--	--	6	700	2	10,000	--
TOTAL PETROLEUM HYDROCARBONS - GASOLINE RANGE ORGANICS 8015 (mg/kg)															
TPH-GRO (VOA)	--	--	<6.5	--	--	--	<7.0	--	--	--	NE	NE	NE	NE	--
PESTICIDES 8081B (mg/kg)															
Aldrin	--	--	<0.0057	--	--	--	<0.0059	--	--	--	0.08	0.08	0.08	30	--
alpha-BHC	--	--	<0.0057	--	--	--	<0.0059	--	--	--	NE	NE	50	NE	--
beta-BHC	--	--	<0.0057	--	--	--	<0.0059	--	--	--	NE	NE	10	NE	--
delta-BHC	--	--	<0.0057	--	--	--	<0.0059	--	--	--	NE	NE	10	NE	--
gamma-BHC (Lindane)	--	--	<0.0030	--	--	--	<0.0030	--	--	--	1	0.5	0.003	600	--
Chlordane	--	--	<0.057	--	--	--	<0.059	--	--	--	5	5	5	600	--
Dieldrin	--	--	<0.0057	--	--	--	<0.0059	--	--	--	0.08	0.08	0.08	30	--
4,4'-DDD	--	--	<0.0057	--	--	--	<0.0059	--	--	--	8	8	8	600	--
4,4'-DDE	--	--	<0.0057	--	--	--	<0.0059	--	--	--	6	6	6	600	--
4,4'-DDT	--	--	<0.0057	--	--	--	<0.0059	--	--	--	6	6	6	600	--
Endrin	--	--	<0.0057	--	--	--	<0.0059	--	--	--	10	10	10	200	--
Endosulfan sulfate	--	--	<0.0057	--	--	--	<0.0059	--	--	--	NE	NE	NE	NE	--
Endosulfan-I	--	--	<0.0057	--	--	--	<0.0059	--	--	--	300	1	0.5	5,000	--
Endosulfan-II	--	--	<0.0057	--	--	--	<0.0059	--	--	--	300	1	0.5	5,000	--
Heptachlor	--	--	<0.0057	--	--	--	<0.0059	--	--	--	0.3	0.3	0.3	100	--
Heptachlor epoxide	--	--	<0.0057	--	--	--	<0.0059	--	--	--	0.1	0.1	0.1	10	--
Hexachlorobenzene	--	--	<0.0057	--	--	--	<0.0059	--	--	--	0.7	0.7	0.7	8	--
Methoxychlor	--	--	<0.0057	--	--	--	<0.0059	--	--	--	200	200	200	4,000	--
Endrin ketone	--	--	<0.0057	--	--	--	<0.0059	--	--	--	NE	NE	NE	NE	--
POLYCHLORINATED BIPHENYLS 8082A (mg/kg)															
Aroclor 1016	--	--	<0.028	--	--	--	<0.030	--	--	--	1	1	1	100	--
Aroclor 1221	--	--	<0.028	--	--	--	<0.030	--	--	--	1	1	1	100	--
Aroclor 1232	--	--	<0.028	--	--	--	<0.030	--	--	--	1	1	1	100	--
Aroclor 1242	--	--	<0.028	--	--	--	<0.030	--	--	--	1	1	1	100	--
Aroclor 1248	--	--	<0.028	--	--	--	<0.030	--	--	--	1	1	1	100	--
Aroclor 1254	--	--	<0.028	--	--	--	<0.030	--	--	--	1	1	1	100	--
Aroclor 1260	--	--	<0.028	--	--	--	<0.030	--	--	--	1	1	1	100	--
Aroclor 1262	--	--	<0.028	--	--	--	<0.030	--	--	--	1	1	1	100	--
Aroclor 1268	--	--	<0.028	--	--	--	<0.030	--	--	--	1	1	1	100	--
HERBICIDES 8151 (mg/kg)															
2,4-D	-	-	<0.017	-	-	-	<0.020	-	-	-	NE	NE	NE	NE	--
2,4,5-TP (Silvex)	-	-	<0.0034	-	-	-	<0.0040	-	-	-	NE	NE	NE	NE	--
2,4,5-T	-	-	<0.0034	-	-	-	<0.0040	-	-	-	NE	NE	NE	NE	--
TOTAL PETROLEUM HYDROCARBONS - DIESEL RANGE ORGANICS 8015 (mg/kg)															
TPH-DRO (Semi-VOA)	-	-	**36.3**	-	-	-	**50**	-	-	-	NE	NE	NE	NE	--
TOTAL METALS (mg/kg)															
Antimony	--	--	--	--	--	--	--	--	--	--	20	20	20	300	--
Arsenic	-	-	**3.2**	-	-	-	**7.2**	-	-	-	20	20	20	500	--
Barium	-	-	**28.1**	-	-	-	**61.7**	-	-	-	1,000	1,000	1000	10,000	--
Beryllium	-	-	-	-	-	-	-	-	-	-	90	90	90	2,000	--
Cadmium	-	-	<0.58	-	-	-	**0.77**	-	-	-	70	70	70	1,000	--
Chromium	-	-	**12.9**	-	-	-	**13.9**	-	-	-	100	100	100	2,000	--
Lead	**12.2**	**8.7**	**17.9**	**15.4**	**7.4**	**10.5**	**238**	**138**	**4.1**	**488**	200	200	200	6,000	--
Mercury	-	-	**0.045**	-	-	-	**0.17**	-	-	-	20	20	20	300	--
Nickel	-	-	-	-	-	-	-	-	-	-	600	600	20	10,000	--
Selenium	-	-	<2.3	-	-	-	<2.3	-	-	-	400	400	400	7,000	--
Silver	-	-	<0.58	-	-	-	<0.57	-	-	-	100	100	100	2,000	--
Thallium	-	-	-	-	-	-	-	-	-	-	8	8	8	800	--
Vanadium	-	-	-	-	-	-	-	-	-	-	400	400	400	7,000	--
Zinc	-	-	-	-	-	-	-	-	-	-	1,000	1,000	1000	10,000	--
TCLP Metals															
Lead	--	--	--	--	--	--	<0.50	--	--	**0.84**	--	--	--	--	5
General Chemistry															
Cyanide Reactivity	-	-	<11	--	--	--	<12	--	--	--	--	--	--	--	--
Ignitability (Flashpoint)	--	--	>200	--	--	--	>200	--	--	--	--	--	--	--	--
Solids, Percent	**77.5**	**81.3**	**86.9**	**91.8**	**86**	**80.8**	**83.8**	**88.4**	**88.7**	**82.4**	--	--	--	--	--
Specific Conductivity	--	--	**156**	--	--	--	**330**	--	--	--	--	--	--	--	--
Sulfide Reactivity	--	--	<110	--	--	--	<120	--	--	--	--	--	--	--	--
pH	--	--	**6.2**	--	--	--	**7.59**	--	--	--	--	--	--	--	--

NOTES:

-- is analysis not performed
NE is not established
ND is not detected
su is standard units.
°F is degrees Farenheit.

mg/kg is milligrams per kilogram.
mg/L is milligrams per liter
PID is photoionization detector.
ppmv is parts per million by volume.
µmhos/cm is micromhos per centimeter

SVOC is semi-volatile organic compound.
<2.0 indicates not detected at or above the laboratory reporting limit of 2.0 mg/kg
Analytes detected above the method reporting limit are in **Bold**
Analytes detected above MCP Reportable Concentrations are in **Red**

TABLE 5

SUMMARY OF SOIL ANALYTICAL DATA - ALL OTHER ANALYSES

Maggiore Somerville
343-351 Summer Street
Somerville, Massachusetts

Sample Date					March 28, 2017						MCP Method 1 Soil Standards (mg/kg)		MCP Reportable Concentrations (mg/kg)	MCP Method 3 Upper Concentration Limits (mg/kg)	TCLP Regulatory Level (mg/kg)
Sample ID	PC-13 0-15 'COMP	PC 13 0 5'	PC 13 10 15'	PC-13 5 10'	PC-14 0-15' COMP	PC-14 0-5'	PC 14 10-15'	PC-14 5-10'	PC-15 0-15' COMP	PC-15 0 5'	S-1				
Depth (feet)	0-15	0-5	10-15	5-10	0-15	0-5	10-15	5-10	0-15	0-5	GW-2	GW-3	RCS-1		
PID (ppmv)	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL					
SEMI-VOLATILE ORGANIC COMPOUNDS 8270D (mg/kg)															
Benzoic acid	<0.59	--	--	--	<0.57	--	--	--	<0.57	--	NE	NE	1000	NE	--
2-Chlorophenol	<0.29	--	--	--	<0.28	--	--	--	<0.29	--	100	100	0.7	3,000	--
4-Chloro-3-methyl phenol	<0.59	--	--	--	<0.57	--	--	--	<0.57	--	NE	NE	1000	NE	--
2,4-Dichlorophenol	<0.59	--	--	--	<0.57	--	--	--	<0.57	--	60	40	0.7	8,000	--
2,4-Dimethylphenol	<0.59	--	--	--	<0.57	--	--	--	<0.57	--	100	500	0.7	10,000	--
2,4-Dinitrophenol	<0.59	--	--	--	<0.57	--	--	--	<0.57	--	50	50	3	8,000	--
2-Methylphenol	<0.59	--	--	--	<0.57	--	--	--	<0.57	--	NE	NE	500	NE	--
3&4 Methylphenol	<0.59	--	--	--	<0.57	--	--	--	<0.57	--	NE	NE	500	NE	--
2-Nitrophenol	<0.59	--	--	--	<0.57	--	--	--	<0.57	--	NE	NE	100	NE	--
4-Nitrophenol	<0.59	--	--	--	<0.57	--	--	--	<0.57	--	NE	NE	100	NE	--
Pentachlorophenol	<0.59	--	--	--	<0.57	--	--	--	<0.57	--	3	3	3	700	--
Phenol	<0.29	--	--	--	<0.28	--	--	--	<0.29	--	50	20	1	10,000	--
2,4,5-Trichlorophenol	<0.59	--	--	--	<0.57	--	--	--	<0.57	--	1000	600	4	10,000	--
2,4,6-Trichlorophenol	<0.59	--	--	--	<0.57	--	--	--	<0.57	--	20	20	0.7	4,000	--
Acenaphthene	<0.12	--	--	--	<0.11	--	--	--	**0.756**	--	1000	1000	4	10,000	--
Acenaphthylene	<0.12	--	--	--	<0.11	--	--	--	<0.11	--	600	10	1	10,000	--
Acetophenone	<0.59	--	--	--	<0.57	--	--	--	<0.57	--	NE	NE	1000	NE	--
Aniline	<0.59	--	--	--	<0.57	--	--	--	<0.57	--	NE	NE	1000	NE	--
Anthracene	**0.133**	--	--	--	**0.154**	--	--	--	**1.75**	--	1000	1000	1000	10,000	--
Benzo(a)anthracene	**0.512**	--	--	--	**0.384**	--	--	--	**4.83**	--	7	7	7	3,000	--
Benzo(a)pyrene	**0.539**	--	--	--	**0.384**	--	--	--	**5.22**	--	2	2	2	300	--
Benzo(b)fluoranthene	**0.413**	--	--	--	**0.283**	--	--	--	**4.09**	--	7	7	7	3,000	--
Benzo(g,h,i)perylene	**0.304**	--	--	--	**0.217**	--	--	--	**2.86**	--	1000	1000	1000	10,000	--
Benzo(k)fluoranthene	**0.416**	--	--	--	**0.291**	--	--	--	**3.45**	--	70	70	70	10,000	--
4-Bromophenyl phenyl ether	<0.29	--	--	--	<0.28	--	--	--	<0.29	--	NE	NE	100	NE	--
Butyl benzyl phthalate	<0.29	--	--	--	<0.28	--	--	--	<0.29	--	NE	NE	100	NE	--
2-Chloronaphthalene	<0.29	--	--	--	<0.28	--	--	--	<0.29	--	NE	NE	1000	NE	--
4-Chloroaniline	<0.59	--	--	--	<0.57	--	--	--	<0.57	--	NE	NE	1	400	--
Chrysene	**0.509**	--	--	--	**0.348**	--	--	--	**4.65**	--	70	70	70	10,000	--
bis(2-Chloroethoxy)methane	<0.29	--	--	--	<0.28	--	--	--	<0.29	--	NE	NE	500	NE	--
bis(2-Chloroethyl)ether	<0.29	--	--	--	<0.28	--	--	--	<0.29	--	0.7	2	0.7	800	--
bis(2-Chloroisopropyl)ether	<0.29	--	--	--	<0.28	--	--	--	<0.29	--	0.7	30	0.7	10,000	--
1,2-Dichlorobenzene	<0.29	--	--	--	<0.28	--	--	--	<0.29	--	100	30	9	10,000	--
1,2-Diphenylhydrazine	<0.29	--	--	--	<0.28	--	--	--	<0.29	--	NE	NE	50	NE	--
1,3-Dichlorobenzene	<0.29	--	--	--	<0.28	--	--	--	<0.29	--	100	100	3	5,000	--
1,4-Dichlorobenzene	<0.29	--	--	--	<0.28	--	--	--	<0.29	--	1	80	0.7	10,000	--
2,4-Dinitrotoluene	<0.59	--	--	--	<0.57	--	--	--	<0.57	--	2	2	0.7	800	--
2,6-Dinitrotoluene	<0.59	--	--	--	<0.57	--	--	--	<0.57	--	NE	NE	100	NE	--
3,3'-Dichlorobenzidine	<0.59	--	--	--	<0.57	--	--	--	<0.57	--	3	3	3	1,000	--
Dibenzo(a,h)anthracene	<0.12	--	--	--	<0.11	--	--	--	**1.05**	--	0.7	0.7	0.7	300	--
Dibenzofuran	<0.12	--	--	--	<0.11	--	--	--	**0.294**	--	NE	NE	100	NE	--
Di-n-butyl phthalate	<0.29	--	--	--	<0.28	--	--	--	<0.29	--	NE	NE	50	NE	--
Di-n-octyl phthalate	<0.29	--	--	--	<0.28	--	--	--	<0.29	--	NE	NE	1000	NE	--
Diethyl phthalate	<0.29	--	--	--	<0.28	--	--	--	<0.29	--	200	300	10	10,000	--
Dimethyl phthalate	<0.29	--	--	--	<0.28	--	--	--	<0.29	--	50	600	0.7	10,000	--
bis(2-Ethylhexyl)phthalate	<0.29	--	--	--	<0.28	--	--	--	<0.29	--	90	90	90	10,000	--
Fluoranthene	**1.02**	--	--	--	**0.882**	--	--	--	**10.7**	--	1000	1000	1000	10,000	--
Fluorene	<0.12	--	--	--	<0.11	--	--	--	**0.537**	--	1000	1000	1000	10,000	--
Hexachlorobenzene	<0.29	--	--	--	<0.28	--	--	--	<0.29	--	0.7	0.7	0.7	8	--
Hexachlorobutadiene	<0.29	--	--	--	<0.28	--	--	--	<0.29	--	30	30	30	1,000	--
Hexachlorocyclopentadiene	<0.59	--	--	--	<0.57	--	--	--	<0.57	--	NE	NE	50	NE	--
Hexachloroethane	<0.29	--	--	--	<0.28	--	--	--	<0.29	--	3	50	0.7	2,000	--
Indeno(1,2,3-cd)pyrene	**0.335**	--	--	--	<0.28	--	--	--	**3.21**	--	7	7	7	3,000	--
Isophorone	<0.29	--	--	--	<0.28	--	--	--	<0.29	--	NE	NE	100	NE	--
2-Methylnaphthalene	<0.12	--	--	--	<0.11	--	--	--	**0.133**	--	80	300	0.7	5,000	--
Naphthalene	<0.12	--	--	--	<0.11	--	--	--	**0.158**	--	20	500	4	10,000	--
Nitrobenzene	<0.29	--	--	--	<0.28	--	--	--	<0.29	--	NE	NE	500	NE	--
N-Nitroso-di-n-propylamine	<0.29	--	--	--	<0.28	--	--	--	<0.29	--	NE	NE	50	NE	--
N-Nitrosodiphenylamine	<0.29	--	--	--	<0.28	--	--	--	<0.29	--	NE	NE	100	NE	--
Phenanthrene	**0.579**	--	--	--	**0.624**	--	--	--	**7.19**	--	500	500	10	10,000	--
Pyrene	**0.955**	--	--	--	**0.759**	--	--	--	**10.1**	--	1000	1000	1000	10,000	--
1,2,4-Trichlorobenzene	<0.29	--	--	--	<0.28	--	--	--	<0.29	--	6	700	2	10,000	--
TOTAL PETROLEUM HYDROCARBONS - GASOLINE RANGE ORGANICS 8015 (mg/kg)															
TPH-GRO (VOA)	<6.5	--	--	--	<6.6	--	--	--	<7.0	--	NE	NE	NE	NE	--
PESTICIDES 8081B (mg/kg)															
Aldrin	<0.0056	--	--	--	<0.0056	--	--	--	<0.0058	--	0.08	0.08	0.08	30	--
alpha-BHC	<0.0056	--	--	--	<0.0056	--	--	--	<0.0058	--	NE	NE	50	NE	--
beta-BHC	<0.0056	--	--	--	<0.0056	--	--	--	<0.0058	--	NE	NE	10	NE	--
delta-BHC	<0.0056	--	--	--	<0.0056	--	--	--	<0.0058	--	NE	NE	10	NE	--
gamma-BHC (Lindane)	<0.0030	--	--	--	<0.0030	--	--	--	<0.0030	--	1	0.5	0.003	600	--
Chlordane	<0.056	--	--	--	<0.056	--	--	--	<0.058	--	5	5	5	600	--
Dieldrin	<0.0056	--	--	--	<0.0056	--	--	--	<0.0058	--	0.08	0.08	0.08	30	--
4,4'-DDD	<0.0056	--	--	--	<0.0056	--	--	--	<0.0058	--	8	8	8	600	--
4,4'-DDE	<0.0056	--	--	--	<0.0056	--	--	--	<0.0058	--	6	6	6	600	--
4,4'-DDT	<0.0056	--	--	--	<0.0056	--	--	--	<0.0058	--	6	6	6	600	--
Endrin	<0.0056	--	--	--	<0.0056	--	--	--	<0.0058	--	10	10	10	200	--
Endosulfan sulfate	<0.0056	--	--	--	<0.0056	--	--	--	<0.0058	--	NE	NE	NE	NE	--
Endosulfan-I	<0.0056	--	--	--	<0.0056	--	--	--	<0.0058	--	300	1	0.5	5,000	--
Endosulfan-II	<0.0056	--	--	--	<0.0056	--	--	--	<0.0058	--	300	1	0.5	5,000	--
Heptachlor	<0.0056	--	--	--	<0.0056	--	--	--	<0.0058	--	0.3	0.3	0.3	100	--
Heptachlor epoxide	<0.0056	--	--	--	<0.0056	--	--	--	<0.0058	--	0.1	0.1	0.1	10	--
Hexachlorobenzene	<0.0056	--	--	--	<0.0056	--	--	--	<0.0058	--	0.7	0.7	0.7	8	--
Methoxychlor	<0.0056	--	--	--	<0.0056	--	--	--	<0.0058	--	200	200	200	4,000	--
Endrin ketone	<0.0056	--	--	--	<0.0056	--	--	--	<0.0058	--	NE	NE	NE	NE	--
POLYCHLORINATED BIPHENYLS 8082A (mg/kg)															
Aroclor 1016	<0.028	--	--	--	<0.028	--	--	--	<0.029	--	1	1	1	100	--
Aroclor 1221	<0.028	--	--	--	<0.028	--	--	--	<0.029	--	1	1	1	100	--
Aroclor 1232	<0.028	--	--	--	<0.028	--	--	--	<0.029	--	1	1	1	100	--
Aroclor 1242	<0.028	--	--	--	<0.028	--	--	--	<0.029	--	1	1	1	100	--
Aroclor 1248	<0.028	--	--	--	<0.028	--	--	--	<0.029	--	1	1	1	100	--
Aroclor 1254	<0.028	--	--	--	<0.028	--	--	--	<0.029	--	1	1	1	100	--
Aroclor 1260	<0.028	--	--	--	<0.028	--	--	--	<0.029	--	1	1	1	100	--
Aroclor 1262	<0.028	--	--	--	<0.028	--	--	--	<0.029	--	1	1	1	100	--
Aroclor 1268	<0.028	--	--	--	<0.028	--	--	--	<0.029	--	1	1	1	100	--
HERBICIDES 8151 (mg/kg)															
2,4-D	<0.018	-	-	-	<0.019	-	-	-	<0.019	-	NE	NE	NE	NE	--
2,4,5-TP (Silvex)	<0.0037	-	-	-	<0.0037	-	-	-	<0.0038	-	NE	NE	NE	NE	--
2,4,5-T	<0.0037	-	-	-	<0.0037	-	-	-	<0.0038	-	NE	NE	NE	NE	--
TOTAL PETROLEUM HYDROCARBONS - DIESEL RANGE ORGANICS 8015 (mg/kg)															
TPH-DRO (Semi-VOA)	**41.9**	-	-	-	**33.3**	-	-	-	**976**	-	NE	NE	NE	NE	--
TOTAL METALS (mg/kg)															
Antimony	--	--	--	--	--	--	--	--	--	--	20	20	20	300	--
Arsenic	**3.5**	-	-	-	**2.5**	-	-	-	**5.4**	-	20	20	20	500	--
Barium	**36.5**	-	-	-	**16.3**	-	-	-	**59.1**	-	1,000	1,000	1000	10,000	--
Beryllium	-					-	-	-	-	-	90	90	90	2,000	--
Cadmium	<0.58	-	-	-	<0.59	-	-	-	<0.59	-	70	70	70	1,000	--
Chromium	**12.6**	-	-	-	**8.2**	-	-	-	**20.1**	-	100	100	100	2,000	--
Lead	**71.7**	**340**	**4.8**	**62.3**	**22.8**	**23.9**	**2.4**	**59.8**	**72.6**	**197**	200	200	200	6,000	-
Mercury	**0.6**	-	-	-	**0.11**	-	-	-	**0.2**	-	20	20	20	300	--
Nickel	-	-	-	-	-	-	-	-	-	-	600	600	20	10,000	--
Selenium	<2.3	-	-	-	<2.4	-	-	-	<2.3	-	400	400	400	7,000	--
Silver	<0.58	-	-	-	<0.59	-	-	-	<0.59	-	100	100	100	2,000	--
Thallium	-	-	-	-	-	-	-	-	-	-	8	8	8	800	--
Vanadium	-	-	-	-	-	-	-	-	-	-	400	400	400	7,000	--
Zinc	-	-	-	-	-	-	-	-	-	-	1,000	1,000	1000	10,000	--
TCLP Metals															
Lead	--	<0.50	--	--	--	--	--	--	--	<0.50	--	--	--	--	5
General Chemistry															
Cyanide Reactivity	<11	--	--	--	<11	--	--	--	<11	--	--	--	--	--	--
Ignitability (Flashpoint)	>200	--	--	--	>200	--	--	--	>200	--	--	--	--	--	--
Solids, Percent	**84.9**	**82.5**	**88.9**	**61.4**	**87.3**	**90.1**	**85.8**	**82.5**	**83.7**	**84**	--	--	--	--	--
Specific Conductivity	**1360**	--	--	--	**240**	--	--	--	**330**	--	--	--	--	--	--
Sulfide Reactivity	<110	--	--	--	<110	--	--	--	<110	--	--	--	--	--	--
pH	**6.38**	--	--	--	**7.28**	--	--	--	**7.51**	--	--	--	--	--	--

NOTES:

-- is analysis not performed	mg/kg is milligrams per kilogram	SVOC is semi-volatile organic compound
NE is not established	mg/L is milligrams per liter	<2.0 indicates not detected at or above the laboratory reporting limit of 2.0 mg/kg
ND is not detected	PID is photoionization detector	Analytes detected above the method reporting limit are in **Bold**.
su is standard units.	ppmv is parts per million by volume.	Analytes detected above MCP Reportable Concentrations are in **Red**
°F is degrees Farenheit.	µmhos/cm is micromhos per centimeter	

TABLE 5

SUMMARY OF SOIL ANALYTICAL DATA - ALL OTHER ANALYSES

Maggiore Somerville
343-351 Summer Street
Somerville, Massachusetts

Sample Date	March 28, 2017										MCP Method 1 Soil Standards (mg/kg)		MCP Reportable Concentrations (mg/kg)	MCP Method 3 Upper Concentration Limits (mg/kg)	TCLP Regulatory Level (mg/kg)
Sample ID	PC-15 10-15'	PC-15 5-10'	PC-16 0-5' COMP	PC-16A 0-5'	PC-16B 0-5'	PC-16C 0-5'	PC-17 0-5' COMP	PC-17A 0-5'	PC-17B 0-5'	PC-17C 0-5'	S-1				
Depth (feet)	10-15	5-10	0-5	0-5	0-5	0-5	0-5	0-5	0-5	0-5					
PID (ppmv)	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	GW-2	GW-3	RCS-1		
SEMI-VOLATILE ORGANIC COMPOUNDS 8270D (mg/kg)															
Benzoic acid	--	--	<0.59	--	--	--	<0.57	--	--	--	NE	NE	1000	NE	--
2-Chlorophenol	--	--	<0.29	--	--	--	<0.29	--	--	--	100	100	0.7	3,000	--
4-Chloro-3-methyl phenol	--	--	<0.59	--	--	--	<0.57	--	--	--	NE	NE	1000	NE	--
2,4-Dichlorophenol	--	--	<0.59	--	--	--	<0.57	--	--	--	60	40	0.7	8,000	--
2,4-Dimethylphenol	--	--	<0.59	--	--	--	<0.57	--	--	--	100	500	0.7	10,000	--
2,4-Dinitrophenol	--	--	<0.59	--	--	--	<0.57	--	--	--	50	50	3	8,000	--
2-Methylphenol	--	--	<0.59	--	--	--	<0.57	--	--	--	NE	NE	500	NE	--
3&4-Methylphenol	--	--	<0.59	--	--	--	<0.57	--	--	--	NE	NE	500	NE	--
2-Nitrophenol	--	--	<0.59	--	--	--	<0.57	--	--	--	NE	NE	100	NE	--
4-Nitrophenol	--	--	<0.59	--	--	--	<0.57	--	--	--	NE	NE	100	NE	--
Pentachlorophenol	--	--	<0.59	--	--	--	<0.57	--	--	--	3	3	3	700	--
Phenol	--	--	<0.29	--	--	--	<0.29	--	--	--	50	20	1	10,000	--
2,4,5-Trichlorophenol	--	--	<0.59	--	--	--	<0.57	--	--	--	1000	600	4	10,000	--
2,4,6-Trichlorophenol	--	--	<0.59	--	--	--	<0.57	--	--	--	20	20	0.7	4,000	--
Acenaphthene	--	--	<0.12	--	--	--	**0.713**	--	--	--	1000	1000	4	10,000	--
Acenaphthylene	--	--	<0.12	--	--	--	**0.14**	--	--	--	600	10	1	10,000	--
Acetophenone	--	--	<0.59	--	--	--	<0.57	--	--	--	NE	NE	1000	NE	--
Aniline	--	--	<0.59	--	--	--	<0.57	--	--	--	NE	NE	1000	NE	--
Anthracene	--	--	<0.12	--	--	--	**1.43**	--	--	--	1000	1000	1000	10,000	--
Benzo(a)anthracene	--	--	**0.314**	--	--	--	**3.28**	--	--	--	7	7	7	3,000	--
Benzo(a)pyrene	--	--	**0.374**	--	--	--	3.4	--	--	--	2	2	2	300	--
Benzo(b)fluoranthene	--	--	**0.297**	--	--	--	**2.73**	--	--	--	7	7	7	3,000	--
Benzo(g,h,i)perylene	--	--	**0.256**	--	--	--	**1.72**	--	--	--	1000	1000	1000	10,000	--
Benzo(k)fluoranthene	--	--	**0.295**	--	--	--	**2.37**	--	--	--	70	70	70	10,000	--
4-Bromophenyl phenyl ether	--	--	<0.29	--	--	--	<0.29	--	--	--	NE	NE	100	NE	--
Butyl benzyl phthalate	--	--	<0.29	--	--	--	<0.29	--	--	--	NE	NE	100	NE	--
2-Chloronaphthalene	--	--	<0.29	--	--	--	<0.29	--	--	--	NE	NE	1000	NE	--
4-Chloroaniline	--	--	<0.59	--	--	--	<0.57	--	--	--	NE	NE	1	400	--
Chrysene	--	--	**0.349**	--	--	--	**3.1**	--	--	--	70	70	70	10,000	--
bis(2-Chloroethoxy)methane	--	--	<0.29	--	--	--	<0.29	--	--	--	NE	NE	500	NE	--
bis(2-Chloroethyl)ether	--	--	<0.29	--	--	--	<0.29	--	--	--	0.7	2	0.7	800	--
bis(2-Chloroisopropyl)ether	--	--	<0.29	--	--	--	<0.29	--	--	--	0.7	30	0.7	10,000	--
1,2-Dichlorobenzene	--	--	<0.29	--	--	--	<0.29	--	--	--	100	30	9	10,000	--
1,2-Diphenylhydrazine	--	--	<0.29	--	--	--	<0.29	--	--	--	NE	NE	50	NE	--
1,3-Dichlorobenzene	--	--	<0.29	--	--	--	<0.29	--	--	--	100	100	3	5,000	--
1,4-Dichlorobenzene	--	--	<0.29	--	--	--	<0.29	--	--	--	1	80	0.7	10,000	--
2,4-Dinitrotoluene	--	--	<0.59	--	--	--	<0.57	--	--	--	2	2	0.7	800	--
2,6-Dinitrotoluene	--	--	<0.59	--	--	--	<0.57	--	--	--	NE	NE	100	NE	--
3,3'-Dichlorobenzidine	--	--	<0.59	--	--	--	<0.57	--	--	--	3	3	3	1,000	--
Dibenzo(a,h)anthracene	--	--	<0.12	--	--	--	**0.651**	--	--	--	0.7	0.7	0.7	300	--
Dibenzofuran	--	--	<0.12	--	--	--	**0.368**	--	--	--	NE	NE	100	NE	--
Di-n-butyl phthalate	--	--	<0.29	--	--	--	<0.29	--	--	--	NE	NE	50	NE	--
Di-n-octyl phthalate	--	--	<0.29	--	--	--	<0.29	--	--	--	NE	NE	1000	NE	--
Diethyl phthalate	--	--	<0.29	--	--	--	<0.29	--	--	--	200	300	10	10,000	--
Dimethyl phthalate	--	--	<0.29	--	--	--	<0.29	--	--	--	50	600	0.7	10,000	--
bis(2-Ethylhexyl)phthalate	--	--	<0.29	--	--	--	<0.29	--	--	--	90	90	90	10,000	--
Fluoranthene	--	--	**0.541**	--	--	--	**6.6**	--	--	--	1000	1000	1000	10,000	--
Fluorene	--	--	<0.12	--	--	--	**0.575**	--	--	--	1000	1000	1000	10,000	--
Hexachlorobenzene	--	--	<0.29	--	--	--	<0.29	--	--	--	0.7	0.7	0.7	8	--
Hexachlorobutadiene	--	--	<0.29	--	--	--	<0.29	--	--	--	30	30	30	1,000	--
Hexachlorocyclopentadiene	--	--	<0.59	--	--	--	<0.57	--	--	--	NE	NE	50	NE	--
Hexachloroethane	--	--	<0.29	--	--	--	<0.29	--	--	--	3	50	0.7	2,000	--
Indeno(1,2,3-cd)pyrene	--	--	<0.29	--	--	--	**1.88**	--	--	--	7	7	7	3,000	--
Isophorone	--	--	<0.29	--	--	--	<0.29	--	--	--	NE	NE	100	NE	--
2-Methylnaphthalene	--	--	<0.12	--	--	--	**0.218**	--	--	--	80	300	0.7	5,000	--
Naphthalene	--	--	<0.12	--	--	--	**0.264**	--	--	--	20	500	4	10,000	--
Nitrobenzene	--	--	<0.29	--	--	--	<0.29	--	--	--	NE	NE	500	NE	--
N-Nitroso-di-n-propylamine	--	--	<0.29	--	--	--	<0.29	--	--	--	NE	NE	50	NE	--
N-Nitrosodiphenylamine	--	--	<0.29	--	--	--	<0.29	--	--	--	NE	NE	100	NE	--
Phenanthrene	--	--	**0.409**	--	--	--	**5.65**	--	--	--	500	500	10	10,000	--
Pyrene	--	--	**0.528**	--	--	--	**6.29**	--	--	--	1000	1000	1000	10,000	--
1,2,4-Trichlorobenzene	--	--	<0.29	--	--	--	<0.29	--	--	--	6	700	2	10,000	--
TOTAL PETROLEUM HYDROCARBONS - GASOLINE RANGE ORGANICS 8015 (mg/kg)															
TPH-GRO (VOA)	--	--	<6.6	--	--	--	<7.1	--	--	--	NE	NE	NE	NE	--
PESTICIDES 8081B (mg/kg)															
Aldrin	--	--	<0.0059	--	--	--	<0.0056	--	--	--	0.08	0.08	0.08	30	--
alpha-BHC	--	--	<0.0059	--	--	--	<0.0056	--	--	--	NE	NE	50	NE	--
beta-BHC	--	--	<0.0059	--	--	--	<0.0056	--	--	--	NE	NE	10	NE	--
delta-BHC	--	--	<0.0059	--	--	--	<0.0056	--	--	--	NE	NE	10	NE	--
gamma-BHC (Lindane)	--	--	<0.0030	--	--	--	<0.0030	--	--	--	1	0.5	0.003	600	--
Chlordane	--	--	<0.059	--	--	--	<0.056	--	--	--	5	5	5	600	--
Dieldrin	--	--	<0.0059	--	--	--	<0.0056	--	--	--	0.08	0.08	0.08	30	--
4,4'-DDD	--	--	<0.0059	--	--	--	<0.0056	--	--	--	8	8	8	600	--
4,4'-DDE	--	--	<0.0059	--	--	--	<0.0056	--	--	--	6	6	6	600	--
4,4'-DDT	--	--	<0.0059	--	--	--	**0.0082**	--	--	--	6	6	6	600	--
Endrin	--	--	<0.0059	--	--	--	<0.0056	--	--	--	10	10	10	200	--
Endosulfan sulfate	--	--	<0.0059	--	--	--	<0.0056	--	--	--	NE	NE	NE	NE	--
Endosulfan-I	--	--	<0.0059	--	--	--	<0.0056	--	--	--	300	1	0.5	5,000	--
Endosulfan-II	--	--	<0.0059	--	--	--	<0.0056	--	--	--	300	1	0.5	5,000	--
Heptachlor	--	--	<0.0059	--	--	--	<0.0056	--	--	--	0.3	0.3	0.3	100	--
Heptachlor epoxide	--	--	<0.0059	--	--	--	<0.0056	--	--	--	0.1	0.1	0.1	10	--
Hexachlorobenzene	--	--	<0.0059	--	--	--	<0.0056	--	--	--	0.7	0.7	0.7	8	--
Methoxychlor	--	--	<0.0059	--	--	--	<0.0056	--	--	--	200	200	200	4,000	--
Endrin ketone	--	--	<0.0059	--	--	--	<0.0056	--	--	--	NE	NE	NE	NE	--
POLYCHLORINATED BIPHENYLS 8082A (mg/kg)															
Aroclor 1016	--	--	<0.030	--	--	--	<0.028	--	--	--	1	1	1	100	--
Aroclor 1221	--	--	<0.030	--	--	--	<0.028	--	--	--	1	1	1	100	--
Aroclor 1232	--	--	<0.030	--	--	--	<0.028	--	--	--	1	1	1	100	--
Aroclor 1242	--	--	<0.030	--	--	--	<0.028	--	--	--	1	1	1	100	--
Aroclor 1248	--	--	<0.030	--	--	--	<0.028	--	--	--	1	1	1	100	--
Aroclor 1254	--	--	<0.030	--	--	--	<0.028	--	--	--	1	1	1	100	--
Aroclor 1260	--	--	<0.030	--	--	--	<0.028	--	--	--	1	1	1	100	--
Aroclor 1262	--	--	<0.030	--	--	--	<0.028	--	--	--	1	1	1	100	--
Aroclor 1268	--	--	<0.030	--	--	--	<0.028	--	--	--	1	1	1	100	--
HERBICIDES 8151 (mg/kg)															
2,4-D	-	-	<0.019	-	-	-	<0.019	-	-	-	NE	NE	NE	NE	--
2,4,5-TP (Silvex)	-	-	<0.0038	-	-	-	<0.0039	-	-	-	NE	NE	NE	NE	--
2,4,5-T	-	-	<0.0038	-	-	-	<0.0039	-	-	-	NE	NE	NE	NE	--
TOTAL PETROLEUM HYDROCARBONS - DIESEL RANGE ORGANICS 8015 (mg/kg)															
TPH-DRO (Semi-VOA)	-	-	**59**	-	-	-	**183**	-	-	-	NE	NE	NE	NE	--
TOTAL METALS (mg/kg)															
Antimony	--	--	--	--	--	--	--	--	--	--	20	20	20	300	--
Arsenic	-	-	**10.7**	-	-	-	**8.1**	-	-	-	20	20	20	500	--
Barium	-	-	**131**	-	-	-	**38.9**	-	-	-	1,000	1,000	1000	10,000	--
Beryllium	-	-	-	-	-	-	-	-	-	-	90	90	90	2,000	--
Cadmium	-	-	<0.61	-	-	-	<0.58	-	-	-	70	70	70	1,000	--
Chromium	-	-	**25.9**	-	-	-	**14.8**	-	-	-	100	100	100	2,000	--
Lead	**3.2**	**9.7**	516	1270	1190	**70**	**53.6**	**31.4**	**44.1**	**25.6**	200	200	200	6,000	--
Mercury	-	-	**0.4**	-	-	-	**0.11**	-	-	-	20	20	20	300	--
Nickel	-	-	-	-	-	-	-	-	-	-	600	600	20	10,000	--
Selenium	-	-	<2.5	-	-	-	<2.3	-	-	-	400	400	400	7,000	--
Silver	-	-	<0.61	-	-	-	<0.58	-	-	-	100	100	100	2,000	--
Thallium	-	-	-	-	-	-	-	-	-	-	8	8	8	800	--
Vanadium	-	-	-	-	-	-	-	-	-	-	400	400	400	7,000	--
Zinc	-	-	-	-	-	-	-	-	-	-	1,000	1,000	1000	10,000	--
TCLP Metals															
Lead	--	--	**0.51**	<0.50	**1.1**	--	--	--	--	--	--	--	--	--	5
General Chemistry															
Cyanide Reactivity	--	--	<11	--	--	--	<11	--	--	--	--	--	--	--	--
Ignitability (Flashpoint)	--	--	>200	--	--	--	>200	--	--	--	--	--	--	--	--
Solids, Percent	89.2	75.8	81.5	81.6	82.8	80.7	85.9	87.9	87.8	84.9	--	--	--	--	--
Specific Conductivity	--	--	**113**	--	--	--	**157**	--	--	--	--	--	--	--	--
Sulfide Reactivity	--	--	<110	--	--	--	<110	--	--	--	--	--	--	--	--
pH	--	--	**8.22**	--	--	--	**6.89**	--	--	--	--	--	--	--	--

NOTES:

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NE is not established.	mg/L is milligrams per liter.	<2.0 indicates not detected at or above the laboratory reporting limit of 2.0 mg/kg
ND is not detected	PID is photoionization detector.	Analytes detected above the method reporting limit are in **Bold**
su is standard units.	ppmv is parts per million by volume.	Analytes detected above MCP Reportable Concentrations are in Red
°F is degrees Farenheit.	µmhos/cm is micromhos per centimeter	

TABLE 5
SUMMARY OF SOIL ANALYTICAL DATA - ALL OTHER ANALYSES

Maggiore Somerville
343 351 Summer Street
Somerville Massachusetts

Sample Date	March 28, 2017								MCP Method 1 Soil Standards (mg/kg)		MCP Reportable Concentrations (mg/kg)	MCP Method 3 Upper Concentration Limits (mg/kg)	TCLP Regulatory Level (mg/kg)
Sample ID	PC-18 0-5' COMP	PC-18A 0-5'	PC-18B 0-5'	PC-18C 0-5'	PC-19 0-5' COMP	PC-19A 0-5'	PC-19B 0-5'	PC-19C 0-5'	S-1				
Depth (feet)	0-5	0-5	0-5	0-5	0-5	0-5	0-5	0-5					
PID (ppmv)	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	GW-2	GW-3	RCS-1		
SEMI-VOLATILE ORGANIC COMPOUNDS 8270D (mg/kg)													
Benzoic acid	<0.55	--	--	--	<0.55	--	--	--	NE	NE	1000	NE	--
2-Chlorophenol	<0.27	--	--	--	<0.28	--	--	--	100	100	0.7	3,000	--
4-Chloro-3-methyl phenol	<0.55	--	--	--	<0.55	--	--	--	NE	NE	1000	NE	--
2,4-Dichlorophenol	<0.55	--	--	--	<0.55	--	--	--	60	40	0.7	8,000	--
2,4-Dimethylphenol	<0.55	--	--	--	<0.55	--	--	--	100	500	0.7	10,000	--
2,4-Dinitrophenol	<0.55	--	--	--	<0.55	--	--	--	50	50	3	8,000	--
2-Methylphenol	<0.55	--	--	--	<0.55	--	--	--	NE	NE	500	NE	--
3&4 Methylphenol	<0.55	--	--	--	<0.55	--	--	--	NE	NE	500	NE	--
2-Nitrophenol	<0.55	--	--	--	<0.55	--	--	--	NE	NE	100	NE	--
4-Nitrophenol	<0.55	--	--	--	<0.55	--	--	--	NE	NE	100	NE	--
Pentachlorophenol	<0.55	--	--	--	<0.55	--	--	--	3	3	3	700	--
Phenol	<0.27	--	--	--	<0.28	--	--	--	50	20	1	10,000	--
2,4,5-Trichlorophenol	<0.55	--	--	--	<0.55	--	--	--	1000	600	4	10,000	--
2,4,6-Trichlorophenol	<0.55	--	--	--	<0.55	--	--	--	20	20	0.7	4,000	--
Acenaphthene	**1.31**	--	--	--	**1.23**	--	--	--	1000	1000	4	10,000	--
Acenaphthylene	**0.577**	--	--	--	**0.758**	--	--	--	600	10	1	10,000	--
Acetophenone	<0.55	--	--	--	<0.55	--	--	--	NE	NE	1000	NE	--
Aniline	<0.55	--	--	--	<0.55	--	--	--	NE	NE	1000	NE	--
Anthracene	**4.08**	--	--	--	**3.72**	--	--	--	1000	1000	1000	10,000	--
Benzo(a)anthracene	**7.82**	--	--	--	**9.24**	--	--	--	7	7	7	3,000	--
Benzo(a)pyrene	**7.01**	--	--	--	**8.73**	--	--	--	2	2	2	300	--
Benzo(b)fluoranthene	**6.39**	--	--	--	**8.46**	--	--	--	7	7	7	3,000	--
Benzo(g,h,i)perylene	**3.25**	--	--	--	**4.18**	--	--	--	1000	1000	1000	10,000	--
Benzo(k)fluoranthene	**4.81**	--	--	--	**5.11**	--	--	--	70	70	70	10,000	--
4-Bromophenyl phenyl ether	<0.27	--	--	--	<0.28	--	--	--	NE	NE	100	NE	--
Butyl benzyl phthalate	<0.27	--	--	--	<0.28	--	--	--	NE	NE	100	NE	--
2-Chloronaphthalene	<0.27	--	--	--	<0.28	--	--	--	NE	NE	1000	NE	--
4-Chloroaniline	<0.55	--	--	--	<0.55	--	--	--	NE	NE	1	400	--
Chrysene	**8.88**	--	--	--	**8.49**	--	--	--	70	70	70	10,000	--
bis(2-Chloroethoxy)methane	<0.27	--	--	--	<0.28	--	--	--	NE	NE	500	NE	--
bis(2-Chloroethyl)ether	<0.27	--	--	--	<0.28	--	--	--	0.7	2	0.7	800	--
bis(2-Chloroisopropyl)ether	<0.27	--	--	--	<0.28	--	--	--	0.7	30	0.7	10,000	--
1,2-Dichlorobenzene	<0.27	--	--	--	<0.28	--	--	--	100	30	9	10,000	--
1,2-Diphenylhydrazine	<0.27	--	--	--	<0.28	--	--	--	NE	NE	50	NE	--
1,3-Dichlorobenzene	<0.27	--	--	--	<0.28	--	--	--	100	100	3	5,000	--
1,4-Dichlorobenzene	<0.27	--	--	--	<0.28	--	--	--	1	80	0.7	10,000	--
2,4-Dinitrotoluene	<0.55	--	--	--	<0.55	--	--	--	2	2	0.7	800	--
2,6-Dinitrotoluene	<0.55	--	--	--	<0.55	--	--	--	NE	NE	100	NE	--
3,3'-Dichlorobenzidine	<0.55	--	--	--	<0.55	--	--	--	3	3	3	1,000	--
Dibenzo(a,h)anthracene	**1.25**	--	--	--	**1.53**	--	--	--	0.7	0.7	0.7	300	--
Dibenzofuran	**0.959**	--	--	--	**0.674**	--	--	--	NE	NE	100	NE	--
Di-n-butyl phthalate	<0.27	--	--	--	<0.28	--	--	--	NE	NE	50	NE	--
Di-n-octyl phthalate	<0.27	--	--	--	<0.28	--	--	--	NE	NE	1000	NE	--
Diethyl phthalate	<0.27	--	--	--	<0.28	--	--	--	200	300	10	10,000	--
Dimethyl phthalate	<0.27	--	--	--	<0.28	--	--	--	50	600	0.7	10,000	--
bis(2-Ethylhexyl)phthalate	<0.27	--	--	--	<0.28	--	--	--	90	90	90	10,000	--
Fluoranthene	**19.1**	--	--	--	**20.6**	--	--	--	1000	1000	1000	10,000	--
Fluorene	**1.51**	--	--	--	**1.28**	--	--	--	1000	1000	1000	10,000	--
Hexachlorobenzene	<0.27	--	--	--	<0.28	--	--	--	0.7	0.7	0.7	8	--
Hexachlorobutadiene	<0.27	--	--	--	<0.28	--	--	--	30	30	30	1,000	--
Hexachlorocyclopentadiene	<0.55	--	--	--	<0.55	--	--	--	NE	NE	50	NE	--
Hexachloroethane	<0.27	--	--	--	<0.28	--	--	--	3	50	0.7	2,000	--
Indeno(1,2,3-cd)pyrene	**3.74**	--	--	--	**4.71**	--	--	--	7	7	7	3,000	--
Isophorone	<0.27	--	--	--	<0.28	--	--	--	NE	NE	100	NE	--
2-Methylnaphthalene	**0.384**	--	--	--	**0.28**	--	--	--	80	300	0.7	5,000	--
Naphthalene	**0.802**	--	--	--	**0.491**	--	--	--	20	500	4	10,000	--
Nitrobenzene	<0.27	--	--	--	<0.28	--	--	--	NE	NE	500	NE	--
N-Nitroso-di-n-propylamine	<0.27	--	--	--	<0.28	--	--	--	NE	NE	50	NE	--
N-Nitrosodiphenylamine	<0.27	--	--	--	<0.28	--	--	--	NE	NE	100	NE	--
Phenanthrene	**14.9**	--	--	--	**13.2**	--	--	--	500	500	10	10,000	--
Pyrene	**15.7**	--	--	--	**17.9**	--	--	--	1000	1000	1000	10,000	--
1,2,4-Trichlorobenzene	<0.27	--	--	--	<0.28	--	--	--	6	700	2	10,000	--
TOTAL PETROLEUM HYDROCARBONS - GASOLINE RANGE ORGANICS 8015 (mg/kg)													
TPH-GRO (VOA)	<6.0	--	--	--	<6.3	--	--	--	NE	NE	NE	NE	--
PESTICIDES 8081B (mg/kg)													
Aldrin	<0.0056	--	--	--	<0.0055	--	--	--	0.08	0.08	0.08	30	--
alpha-BHC	<0.0056	--	--	--	<0.0055	--	--	--	NE	NE	50	NE	--
beta-BHC	<0.0056	--	--	--	<0.0055	--	--	--	NE	NE	10	NE	--
delta-BHC	<0.0056	--	--	--	<0.0055	--	--	--	NE	NE	10	NE	--
gamma-BHC (Lindane)	<0.0030	--	--	--	<0.0030	--	--	--	1	0.5	0.003	600	--
Chlordane	<0.056	--	--	--	<0.055	--	--	--	5	5	5	600	--
Dieldrin	<0.0056	--	--	--	<0.0055	--	--	--	0.08	0.08	0.08	30	--
4,4'-DDD	<0.0056	--	--	--	<0.0055	--	--	--	8	8	8	600	--
4,4'-DDE	<0.0056	--	--	--	<0.0055	--	--	--	6	6	6	600	--
4,4'-DDT	**0.0163**	--	--	--	**0.0149**	--	--	--	6	6	6	600	--
Endrin	<0.0056	--	--	--	<0.0055	--	--	--	10	10	10	200	--
Endosulfan sulfate	<0.0056	--	--	--	<0.0055	--	--	--	NE	NE	NE	NE	--
Endosulfan-I	<0.0056	--	--	--	<0.0055	--	--	--	300	1	0.5	5,000	--
Endosulfan-II	<0.0056	--	--	--	<0.0055	--	--	--	300	1	0.5	5,000	--
Heptachlor	<0.0056	--	--	--	<0.0055	--	--	--	0.3	0.3	0.3	100	--
Heptachlor epoxide	<0.0056	--	--	--	<0.0055	--	--	--	0.1	0.1	0.1	10	--
Hexachlorobenzene	<0.0056	--	--	--	<0.0055	--	--	--	0.7	0.7	0.7	8	--
Methoxychlor	<0.0056	--	--	--	<0.0055	--	--	--	200	200	200	4,000	--
Endrin ketone	<0.0056	--	--	--	<0.0055	--	--	--	NE	NE	NE	NE	--
POLYCHLORINATED BIPHENYLS 8082A (mg/kg)													
Aroclor 1016	<0.028	--	--	--	<0.027	--	--	--	1	1	1	100	--
Aroclor 1221	<0.028	--	--	--	<0.027	--	--	--	1	1	1	100	--
Aroclor 1232	<0.028	--	--	--	<0.027	--	--	--	1	1	1	100	--
Aroclor 1242	<0.028	--	--	--	<0.027	--	--	--	1	1	1	100	--
Aroclor 1248	<0.028	--	--	--	<0.027	--	--	--	1	1	1	100	--
Aroclor 1254	<0.028	--	--	--	**0.0319**	--	--	--	1	1	1	100	--
Aroclor 1260	<0.028	--	--	--	<0.027	--	--	--	1	1	1	100	--
Aroclor 1262	<0.028	--	--	--	<0.027	--	--	--	1	1	1	100	--
Aroclor 1268	<0.028	--	--	--	<0.027	--	--	--	1	1	1	100	--
HERBICIDES 8151 (mg/kg)													
2,4-D	<0.018	-	-	-	<0.018	-	-	-	NE	NE	NE	NE	--
2,4,5-TP (Silvex)	<0.0036	-	-	-	<0.0037	-	-	-	NE	NE	NE	NE	--
2,4,5-T	<0.0036	-	-	-	<0.0037	-	-	-	NE	NE	NE	NE	--
TOTAL PETROLEUM HYDROCARBONS - DIESEL RANGE ORGANICS 8015 (mg/kg)													
TPH-DRO (Semi-VOA)	**311**	-	-	-	**345**	-	-	-	NE	NE	NE	NE	--
TOTAL METALS (mg/kg)													
Antimony	--	--	--	--	--	-	-	-	20	20	20	300	--
Arsenic	**7**	-	-	-	**5.4**	-	-	-	20	20	20	500	--
Barium	**103**	-	-	-	**31.9**	-	-	-	1,000	1,000	1000	10,000	--
Beryllium	-	-	-	-	-	-	-	-	90	90	90	2,000	--
Cadmium	<0.57	-	-	-	<0.55	-	-	-	70	70	70	1,000	--
Chromium	**11.3**	-	-	-	**11.9**	-	-	-	100	100	100	2,000	--
Lead	**98.2**	**82.9**	**293**	**84.8**	**151**	**85.4**	**471**	**320**	200	200	200	6,000	--
Mercury	**0.038**	-	-	-	**0.13**	-	-	-	20	20	20	300	--
Nickel	-	-	-	-	-	-	-	-	600	600	20	10,000	--
Selenium	<2.3	-	-	-	<2.2	-	-	-	400	400	400	7,000	--
Silver	<0.57	-	-	-	<0.55	-	-	-	100	100	100	2,000	--
Thallium	-	-	-	-	-	-	-	-	8	8	8	800	--
Vanadium	-	-	-	-	-	-	-	-	400	400	400	7,000	--
Zinc	-	-	-	-	-	-	-	-	1,000	1,000	1000	10,000	--
TCLP Metals													
Lead	--	--	<0.50	--	<0.50	--	<0.50	<0.50	--	--	--	--	5
General Chemistry													
Cyanide Reactivity	<11	--	--	--	<11	--	--	--	--	--	--	--	--
Ignitability (Flashpoint)	>200	--	--	--	>200	--	--	--	--	--	--	--	--
Solids, Percent	**88**	**88.3**	**85.7**	**84**	**87.2**	**88**	**81.7**	**82.6**	--	--	--	--	--
Specific Conductivity	**328**	--	--	--	**188**	--	--	--	--	--	--	--	--
Sulfide Reactivity	<110	--	--	--	<110	--	--	--	--	--	--	--	--
pH	**7.77**	--	--	--	**7.96**	--	--	--	--	--	--	--	--

NOTES:

-- is analysis not performed
NE is not established.
ND is not detected
su is standard units.
°F is degrees Farenheit

mg/kg is milligrams per kilogram.
mg/L is milligrams per liter
PID is photoionization detector
ppmv is parts per million by volume.
µmhos/cm is micromhos per centimeter

SVOC is semi-volatile organic compound
<2.0 indicates not detected at or above the laboratory reporting limit of 2.0 mg/kg
Analytes detected above the method reporting limit are in **Bold**
Analytes detected above MCP Reportable Concentrations are in **Red**

TABLE 6

SUMMARY OF SURFICIAL SOIL ANALYTICAL DATA

Maggiore Somerville
343-351 Summer Street
Somerville, Massachusetts

Sample Date	April 19, 2017		MCP Method 1 Soil Standards (mg/kg)		MCP Reportable Concentrations (mg/kg)
Sample ID	PC-20 (COMP)	PC-21 (COMP)	S-1		RCS-1
Depth (inches)	0-18	0-18	GW-2	GW-3	
PID (ppmv)	BDL	BDL			
VOLATILE ORGANIC COMPOUNDS (mg/kg)					
Acetone	<0.0097	<0.0095	50	400	6
Benzene	<0.00049	<0.00048	40	40	2
Bromobenzene	<0.0049	<0.0048	NE	NE	100
Bromochloromethane	<0.0049	<0.0048	NE	NE	NE
Bromodichloromethane	<0.0019	<0.0019	0.1	30	0.1
Bromoform	<0.0049	<0.0048	1	300	0.1
Bromomethane	<0.0049	<0.0048	0.5	30	0.5
2-Butanone (MEK)	<0.0097	<0.0095	50	400	4
n-Butylbenzene	<0.0019	<0.0019	NE	NE	NE
sec-Butylbenzene	<0.0019	<0.0019	NE	NE	NE
tert-Butylbenzene	<0.0019	<0.0019	NE	NE	100
Carbon disulfide	<0.0019	<0.0019	NE	NE	100
Carbon tetrachloride	<0.0019	<0.0019	5	30	5
Chlorobenzene	<0.0019	<0.0019	3	100	1
Chloroethane	<0.0049	<0.0048	NE	NE	100
Chloroform	<0.0019	<0.0019	0.2	500	0.2
Chloromethane	<0.0049	<0.0048	NE	NE	100
o-Chlorotoluene	<0.0019	<0.0019	NE	NE	100
p-Chlorotoluene	<0.0019	<0.0019	NE	NE	NE
Di-Isopropyl ether	<0.0019	<0.0019	NE	NE	100
1,2-Dibromo-3-chloropropane	<0.0019	<0.0019	NE	NE	10
Dibromochloromethane	<0.0019	<0.0019	0.03	20	0.005
1,2-Dibromoethane	<0.00097	<0.00095	0.1	1	0.1
1,2-Dichlorobenzene	<0.00097	<0.00095	100	300	9
1,3-Dichlorobenzene	<0.00097	<0.00095	100	100	3
1,4-Dichlorobenzene	<0.00097	<0.00095	1	80	0.7
Dichlorodifluoromethane	<0.0049	<0.0048	NE	NE	1,000
1,1-Dichloroethane	<0.00097	<0.00095	9	500	0.4
1,2-Dichloroethane	<0.00097	<0.00095	0.1	20	0.1
1,1-Dichloroethene	<0.00097	<0.00095	40	500	3
cis-1,2-Dichloroethene	<0.00097	<0.00095	0.1	100	0.1
trans-1,2-Dichloroethene	<0.00097	<0.00095	1	500	1
1,2-Dichloropropane	<0.0019	<0.0019	0.1	30	0.1
1,3-Dichloropropane	<0.0019	<0.0019	NE	NE	500
2,2-Dichloropropane	<0.0019	<0.0019	NE	NE	NE
1,1-Dichloropropene	<0.0019	<0.0019	NE	NE	NE
cis-1,3-Dichloropropene	<0.0019	<0.0019	NE	NE	0.01
trans-1,3-Dichloropropene	<0.0019	<0.0019	NE	NE	0.01
1,4-Dioxane	<0.12	<0.12	6	20	0.2
Ethyl Ether	<0.0019	<0.0019	NE	NE	100
Ethylbenzene	<0.00097	<0.00095	500	500	40
Hexachlorobutadiene	<0.0049	<0.0048	30	30	30
2-Hexanone	<0.0049	<0.0048	NE	NE	100
Isopropylbenzene	<0.0019	<0.0019	NE	NE	1,000
p-Isopropyltoluene	<0.0019	<0.0019	NE	NE	100
Methyl Tert Butyl Ether	<0.00097	<0.00095	100	100	0.1
4-Methyl-2-pentanone (MIBK)	<0.0049	<0.0048	50	400	0.4
Methylene bromide	<0.0049	<0.0048	NE	NE	500
Methylene chloride	<0.0049	<0.0048	4	400	0.1
Naphthalene	<0.0049	<0.0048	20	500	4
n-Propylbenzene	<0.0019	<0.0019	NE	NE	100
Styrene	<0.0019	<0.0019	4	70	3
tert-Amyl Methyl Ether	<0.0019	<0.0019	NE	NE	NE
tert-Butyl Ethyl Ether	<0.0019	<0.0019	NE	NE	NE
1,1,1,2-Tetrachloroethane	<0.0019	<0.0019	0.1	80	0.1
1,1,2,2-Tetrachloroethane	<0.0019	<0.0019	0.02	10	0.005
Tetrachloroethene	<0.0019	<0.0019	10	30	1
Tetrahydrofuran	<0.0097	<0.0095	NE	NE	500
Toluene	<0.00097	<0.00095	500	500	30
1,2,3-Trichlorobenzene	<0.0049	<0.0048	NE	NE	NE
1,2,4-Trichlorobenzene	<0.0049	<0.0048	6	700	2
1,1,1-Trichloroethane	<0.0019	<0.0019	500	500	30
1,1,2-Trichloroethane	<0.0019	<0.0019	2	40	0.1
Trichloroethene	<0.00097	<0.00095	0.3	30	0.3
Trichlorofluoromethane	<0.0049	<0.0048	NE	NE	1,000
1,2,3-Trichloropropane	<0.0049	<0.0048	NE	NE	100
1,2,4-Trimethylbenzene	<0.0019	<0.0019	NE	NE	1,000
1,3,5-Trimethylbenzene	<0.0019	<0.0019	NE	NE	10
Vinyl chloride	<0.0019	<0.0019	0.7	1	0.7
m,p-Xylene	<0.00097	<0.00095	100	500	100
o-Xylene	<0.00097	<0.00095	100	500	100
Xylene (total)	**0.001**	<0.00095	100	500	100
Total VOCs	**0.001**	ND	NE	NE	NE

NOTES:

-- is analysis not performed.	VOC is volatile organic compound.
NE is not established.	SVOC is semi-volatile organic compound.
ND is not detected.	<2.0 indicates not detected at or above the laboratory reporting limit of 2.0 mg/kg.
su is standard units.	Analytes detected above the method reporting limit are in **Bold**.
^{o}F is degrees Farenheit.	Analytes detected above MCP Reportable Concentrations are in Red.

TABLE 6
SUMMARY OF SURFICIAL SOIL ANALYTICAL DATA

Maggiore Somerville
343-351 Summer Street
Somerville, Massachusetts

Sample Date	April 19, 2017		MCP Method 1 Soil Standards (mg/kg)		MCP Reportable Concentrations (mg/kg)
Sample ID	PC-20 (COMP)	PC-21 (COMP)			
Depth (inches)	0-18	0-18	S-1		RCS-1
PID (ppmv)	BDL	BDL	GW-2	GW-3	
SEMI-VOLATILE ORGANIC COMPOUNDS (mg/kg)					
Benzoic acid	<0.76	<0.76	NE	NE	1,000
2-Chlorophenol	<0.076	<0.076	100	100	0.7
4-Chloro-3-methyl phenol	<0.19	<0.19	NE	NE	1,000
2,4-Dichlorophenol	<0.19	<0.19	60	40	0.7
2,4-Dimethylphenol	<0.19	<0.19	100	500	0.7
2,4-Dinitrophenol	<0.19	<0.19	50	50	3
4,6-Dinitro-o-cresol	<0.19	<0.19	NE	NE	NE
2-Methylphenol	<0.076	<0.076	NE	NE	500
3&4-Methylphenol	<0.076	<0.076	NE	NE	500
2-Nitrophenol	<0.19	<0.19	NE	NE	100
4-Nitrophenol	<0.38	<0.38	NE	NE	100
Pentachlorophenol	<0.15	<0.15	3	3	3
Phenol	<0.076	<0.076	50	20	1
2,4,5-Trichlorophenol	<0.19	<0.19	1,000	600	4
2,4,6-Trichlorophenol	<0.19	<0.19	20	20	0.7
Acenaphthene	**1.9**	**0.9**	1,000	1,000	4
Acenaphthylene	**1.01**	**0.4**	600	10	1.0
Acetophenone	<0.19	<0.19	NE	NE	1,000
Aniline	<0.076	<0.076	NE	NE	1,000
Anthracene	**4.4**	**2.6**	1,000	1,000	1,000
Benzo(a)anthracene	**8.6**	**3.2**	7	7	7
Benzo(a)pyrene	**7.9**	**3.1**	2	2	2
Benzo(b)fluoranthene	**9.2**	**3.6**	7	7	7
Benzo(g,h,i)perylene	**4.1**	**1.7**	1,000	1,000	1,000
Benzo(k)fluoranthene	**3.7**	**1.2**	70	70	70
4-Bromophenyl phenyl ether	<0.076	<0.076	NE	NE	100
Butyl benzyl phthalate	**2.2**	**0.09**	NE	NE	100
2-Chloronaphthalene	<0.076	<0.076	NE	NE	1,000
4-Chloroaniline	<0.19	<0.19	7	3	1
Chrysene	**8.2**	**3.5**	70	70	70
bis(2-Chloroethoxy)methane	<0.076	<0.076	NE	NE	500
bis(2-Chloroethyl)ether	<0.076	<0.076	0.7	2	0.7
bis(2-Chloroisopropyl)ether	<0.076	<0.076	0.7	30	0.7
4-Chlorophenyl phenyl ether	<0.076	<0.076	NE	NE	NE
1,2-Dichlorobenzene	<0.076	<0.076	100	300	9
1,2-Diphenylhydrazine	<0.076	<0.076	NE	NE	50
1,3-Dichlorobenzene	<0.076	<0.076	100	100	3
1,4-Dichlorobenzene	<0.076	<0.076	1	80	0.7
2,4-Dinitrotoluene	<0.038	<0.038	2	2	0.7
2,6-Dinitrotoluene	<0.038	<0.038	NE	NE	100
3,3'-Dichlorobenzidine	<0.076	<0.076	3	3	3
Dibenzo(a,h)anthracene	**1.8**	**0.5**	0.7	0.7	0.7
Dibenzofuran	**1.6**	**0.9**	NE	NE	100
Di-n-butyl phthalate	<0.076	<0.076	NE	NE	50
Di-n-octyl phthalate	<0.076	<0.076	NE	NE	1,000
Diethyl phthalate	<0.076	<0.076	200	300	10
Dimethyl phthalate	<0.076	<0.076	50	600	1
bis(2-Ethylhexyl)phthalate	**0.09**	<0.076	90	90	90
Fluoranthene	**19.8**	**7.6**	1,000	1,000	1,000
Fluorene	**2.3**	**1.1**	1,000	1,000	1,000
Hexachlorobenzene	<0.076	<0.076	0.7	0.7	0.7
Hexachlorobutadiene	<0.038	<0.038	30	30	30
Hexachlorocyclopentadiene	<0.38	<0.38	NE	NE	50
Hexachloroethane	<0.19	<0.19	3	50	0.7
Indeno(1,2,3-cd)pyrene	**4.8**	**1.9**	7	7	7
Isophorone	<0.076	<0.076	NE	NE	100
2-Methylnaphthalene	**0.6**	**0.4**	80	300	0.7
Naphthalene	**0.8**	**1.0**	20	500	4
Nitrobenzene	<0.076	<0.076	NE	NE	500
n-Nitrosodimethylamine	<0.076	<0.076	NE	NE	NE
N-Nitroso-di-n-propylamine	<0.076	<0.076	NE	NE	50
N-Nitrosodiphenylamine	<0.19	<0.19	NE	NE	100
Phenanthrene	**16.2**	**8.6**	500	500	10
Pyrene	**16.9**	**7.0**	1,000	1,000	1,000
1,2,4-Trichlorobenzene	<0.076	<0.076	6	700	2
Total SVOCs	**116.0**	**49.2**	NE	NE	NE
TOTAL PETROLEUM HYDROCARBONS (mg/kg)					
Gasoline Range Organics	<6.2	<6.0	NE	NE	NE
Diesel Range Organics	**6,580**	**193**	NE	NE	NE

NOTES:

-- is analysis not performed.	VOC is volatile organic compound.
NE is not established.	SVOC is semi-volatile organic compound.
ND is not detected.	<2.0 indicates not detected at or above the laboratory reporting limit of 2.0 mg/kg.
su is standard units.	Analytes detected above the method reporting limit are in **Bold**.
°F is degrees Farenheit.	Analytes detected above MCP Reportable Concentrations are in Red.

TABLE 6
SUMMARY OF SURFICIAL SOIL ANALYTICAL DATA

Maggiore Somerville
343-351 Summer Street
Somerville, Massachusetts

Sample Date	April 19, 2017		**MCP Method 1 Soil Standards (mg/kg)**		**MCP Reportable Concentrations (mg/kg)**
Sample ID	PC-20 (COMP)	PC-21 (COMP)	S-1		
Depth (inches)	0-18	0-18			
PID (ppmv)	BDL	BDL	GW-2	GW-3	RCS-1
POLYCHLORINATED BIPHENYLS (mg/kg)					
Aroclor 1016	<0.028	<0.028	1	1	1
Aroclor 1221	<0.028	<0.028	1	1	1
Aroclor 1232	<0.028	<0.028	1	1	1
Aroclor 1242	<0.028	<0.028	1	1	1
Aroclor 1248	<0.028	<0.028	1	1	1
Aroclor 1254	<0.028	<0.028	1	1	1
Aroclor 1260	<0.028	<0.028	1	1	1
Aroclor 1262	<0.028	<0.028	1	1	1
Aroclor 1268	<0.028	<0.028	1	1	1
PESTICIDES (mg/kg)					
Aldrin	<0.0057	<0.0056	0.08	0.08	0.08
alpha-BHC	<0.0057	<0.0056	NE	NE	50
beta-BHC	<0.0057	<0.0056	NE	NE	10
delta-BHC	<0.0057	<0.0056	NE	NE	10
gamma-BHC (Lindane)	<0.0030	<0.0056	1	0.5	0.003
Chlordane	<0.057	<0.056	5	5	5
Dieldrin	<0.0057	<0.0056	0.08	0.08	0.08
4,4'-DDD	<0.0057	<0.0056	8	8	8
4,4'-DDE	<0.0057	<0.0056	6	6	6
4,4'-DDT	**0.03**	**0.009**	6	6	6
Endrin	<0.0057	<0.0056	10	10	10
Endosulfan sulfate	<0.0057	<0.0056	NE	NE	NE
Endosulfan-I	<0.0057	<0.0056	300	1	0.5
Endosulfan-II	<0.0057	<0.0056	300	1	0.5
Heptachlor	<0.0057	<0.0056	0.3	0.3	0.3
Heptachlor epoxide	<0.0057	<0.0056	0.1	0.1	0.1
Hexachlorobenzene	<0.0057	<0.0056	0.7	0.7	0.7
Methoxychlor	<0.0057	<0.0056	200	200	200
Endrin ketone	<0.0057	<0.0056	NE	NE	NE
HERBICIDES (mg/kg)					
2,4-D	<0.038	<0.035	NE	NE	NE
2,4,5-TP (Silvex)	<0.0075	<0.0069	NE	NE	NE
2,4,5-T	<0.0075	<0.0069	NE	NE	NE
TOTAL METALS (mg/kg)					
Arsenic	**10.4**	**7.4**	20	20	20
Barium	**40.4**	**28.1**	1,000	1,000	1,000
Cadmium	<0.57	<0.55	70	70	70
Chromium	**13.3**	**12.5**	100	100	100
Lead	**58.0**	**76.7**	200	200	200
Mercury	**0.2**	**0.1**	20	20	20
Selenium	<2.3	<2.2	400	400	400
Silver	<0.57	<0.55	100	100	100
GENERAL CHEMISTRY					
Cyanide Reactivity (mg/kg)	<11	<11	NE	NE	NE
Ignitability (°F)	>200	>200	NE	NE	NE
Specific Conductivity (µmhos/cm)	**269**	**168**	NE	NE	NE
Sulfide Reactivity (mg/kg)	<110	<110	NE	NE	NE
pH (su)	**7.6**	**6.9**	NE	NE	NE

NOTES:

-- is analysis not performed.	VOC is volatile organic compound.
NE is not established.	SVOC is semi-volatile organic compound.
ND is not detected.	<2.0 indicates not detected at or above the laboratory reporting limit of 2.0 mg/kg.
su is standard units.	Analytes detected above the method reporting limit are in **Bold**.
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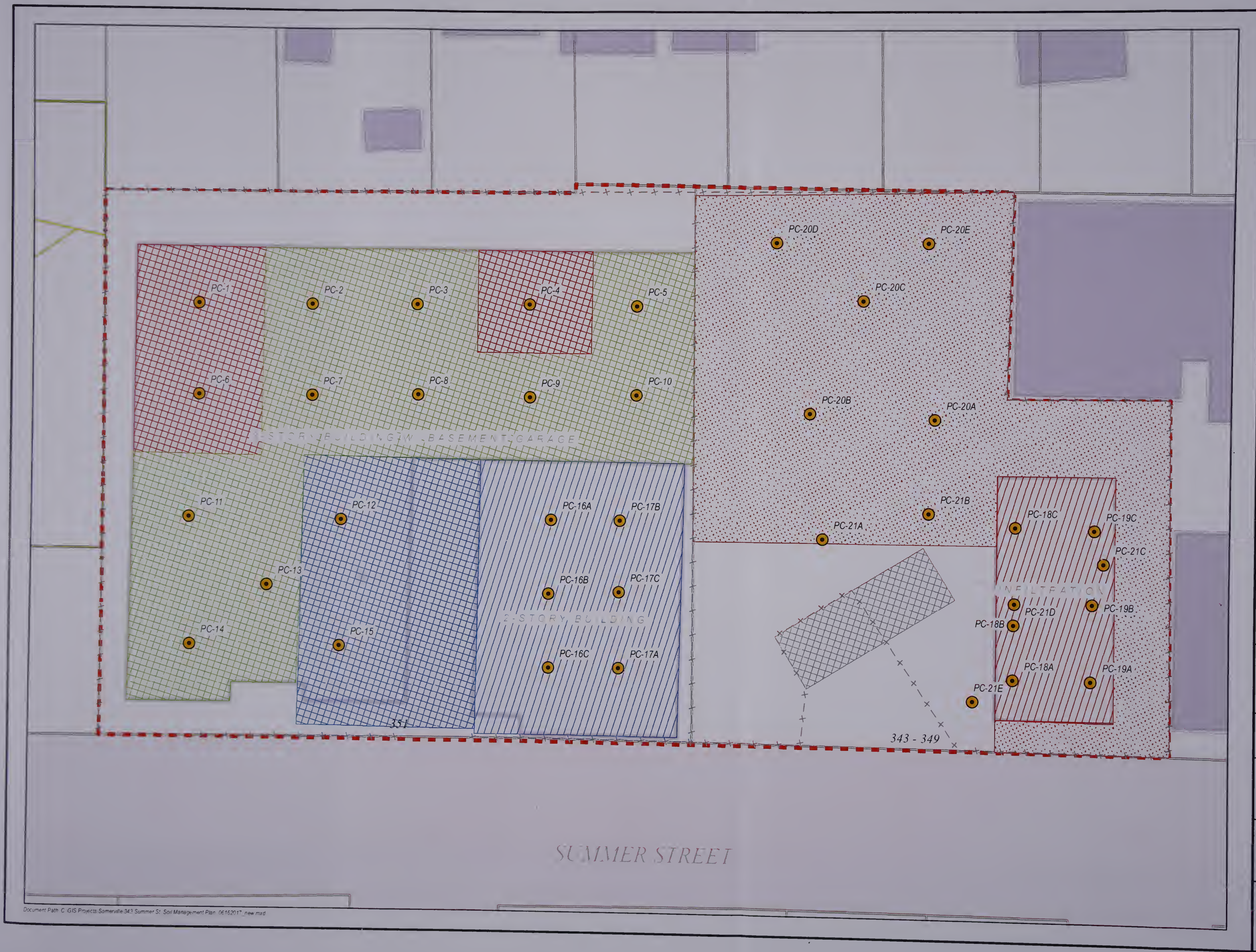

LEGEND

▨ EXISTING STRUCTURES
☐ PROPOSED IMPROVEMENTS
● DISPOSAL SAMPLE LOCATIONS
▨ MBTA VENT
× — × FENCE

SOIL EXPORT

▨ LANDFILL (0-13 FT=1,720 CY)
▨ LANDFILL (0-5 FT=775 CY)
▨ RECLAMATION (0-13 FT=4,350 CY)
▨ ARC (0-5 FT=380 CY)
▨ ARC (0-13 FT=1,360 CY)
▨ ARC (0-8 IN=250 CY)

N

Data Source: Office of Geographic Information (MassGIS), Commonwealth of Massachusetts, MassIT.

0 25 50
Feet Feet
APPROXIMATE SCALE

REVISED BY: RHB
REVISION DATE: 6/18/2017

FIGURE
2

SOIL MANAGEMENT PLAN

351 SUMMER LLC
343-351 SUMMER STREET
SOMERVILLE, MASSACHUSETTS

EnviroTrac
Environmental Services

APPENDIX A

SOIL MANAGEMENT PLAN

343-351 Summer Street
Somerville, Massachusetts

MassDEP RTNs 3-33735 and 3-34098

June 16, 2017

Prepared for:

351 Summer LLC
c/o The Maggiore Companies
13 Wheeling Avenue
Woburn, Massachusetts 01801

Prepared by:

EnviroTrac Ltd.
2 Merchant Street
Suite 2
Sharon, Massachusetts 02067

A Full Service Environmental Consulting and Contracting Firm

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4.0 MCP REQUIREMENTS **2**
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FIGURES

Figure 1	Site Locus Map
Figure 2	Site Plan

1.0 INTRODUCTION

On behalf of 351 Summer LLC (351 Summer), EnviroTrac Ltd. (EnviroTrac) prepared this Soil Management Plan (SMP) for the management of potentially impacted soil during the site work and construction planned for the properties located at 343-349 and 351 Summer Street in Somerville, Massachusetts (the Site).

This SMP was prepared as address conditions associated with Massachusetts Department of Environmental Protection (MassDEP) Release Tracking Numbers (RTN) 3-33735 and 3-34098. This SMP describes appropriate soil excavation, handling, storage, transport, and disposal procedures in accordance with the Massachusetts Contingency Plan (MCP) at 310 CMR 40.0030. This SMP also includes a description of engineering controls and air monitoring procedures necessary to ensure that workers and other individuals in the vicinity are not affected by fugitive dust or particulates. On-site workers must be informed of the requirements of this SMP, and the SMP must be available on-site throughout the course of the project.

1.1 Site Description

The Property is an approximately 0.93 acre plot of land comprised of two (2) parcels identified by the City of Somerville's Assessor's Office as Map #25, Block D, Lots #33 (343-349 Summer Street) and #36 (351 Summer Street) in an area zoned Residence A RA and Central Business District (CBD), and is surrounded by properties zoned Residence B (RB) and Neighborhood Business (NB). The latitude and longitude of the Property are 42.39369° North and 71.11910° West, respectively. The location of the Facility is depicted on **Figure 1**.

The Property consists of a vacant parcels of land located in a flat, low-lying area surrounded by residences and commercial properties. The Massachusetts Bay Transportation Authority (MBTA) Red Line runs directly below the Site within a bedrock tunnel approximately 80 feet bgs. The parcels identified as 343-349 Summer Street are currently undeveloped but contain an air vent for the MBTA Red Line which runs beneath the southwestern portion of the parcels. The parcel at 351 Summer Street is currently used as a paved parking lot for the adjacent George Dilboy VFW Post #529.

Historically, the 351 Summer Street parcel was used as a gasoline filling station prior to the parcel being vacated to facilitate the construction of the MBTA Red Line beneath the property in the 1980s. The 343-349 Summer Street parcels had been the location of residential dwellings and associated parking. Two (2) 60-gallon underground storage tanks (USTs) were formerly located at the Facility and contained fuel oil.

The Facility is bordered by the following:

North:	Residential properties
South:	Summer Street, beyond which are residential properties.
East:	Residential and commercial properties.
West:	Veterans of Foreign Wars building/parking lot and commercial properties.

The Facility, surrounding properties, and other pertinent features are depicted in **Figure 2**.

1.2 Disposal Site Description

The Disposal Site is defined as the portion of the Property where oil and hazardous materials have come to be located as a result of the releases at the Property. Based on analytical data collected to date, the approximate horizontal extent of the preliminary Disposal Site for RTN 3-34098 encompasses both project parcels and is depicted on the Site Plan (**Figure 2**). The Disposal Site extends vertically approximately from the ground surface to 15 feet bgs.

2.0 PROJECT CONTACTS

1.	Potentially Responsible Party and Owner/Operator:	351 Summer LLC c/o The Maggiore Companies 13 Wheeling Avenue Woburn, Massachusetts 01801 Contact: Matthew P. Maggiore, Manager Phone: (781) 935-6100
2.	Licensed Site Professional (LSP) of Record:	Robert H. Bird, Principal Hydrogeologist LSP No. 8972 EnviroTrac Ltd. 2 Merchant Street, Suite 2 Sharon, Massachusetts 02067 Phone: (781) 793-0074

3.0 ROLES AND RESPONSIBILITIES

351 Summer will procure the services of a contractor to complete construction activities related to redevelopment. The contractor will furnish all labor, equipment, and materials required to complete the project, including soil excavation, stockpiling, solidification/stabilization, transportation of soil, and/or traffic management. Equipment used to handle soil shall be decontaminated on-site prior to removal from the Site. Decontamination shall be completed by the contractor using best management practices. The contractor will also obtain all necessary federal, state and local permits, approvals, and clearances required to complete the project.

EnviroTrac will provide environmental oversight, as needed, during site work and construction. Activities associated with oversight are described in **Section 6.0**.

Off-site disposal of excavated soil is anticipated; therefore, the preparation and execution of Bills of Lading and/or Material Shipping Records by a LSP is required. EnviroTrac will prepare the appropriate documents based on the results of soil pre-characterization sampling conducted during excavation. EnviroTrac will also satisfy all other procedures and/or requirements set forth by 310 CMR 40.0030 for the management of Remediation Waste.

4.0 MCP REQUIREMENTS

This SMP was written to cover construction activities related to the redevelopment of the Site and in accordance with 310 CMR 40.0030.

Off-site disposal of excavated soil is anticipated during construction; therefore, soil excavation will be conducted as a Release Abatement Measure (RAM) in accordance with 310 CMR 40.0440. As required by 310 CMR 40.0443, EnviroTrac will prepare and submit a RAM Plan to MassDEP prior to the initiation of construction activities. Public involvement activities pursuant to 310 CMR 40.1400 was also be completed.

All excavated Remediation Waste will be managed in accordance with the provisions of 310 CMR 40.0030 and applicable federal, state or local statutes, bylaws, and regulations.

5.0 HEALTH AND SAFETY PLAN

In accordance with 310 CMR 40.0441(6), a Health and Safety (H&S) Plan was prepared pursuant to worker health and safety practices cited in the MCP at 310 CMR 40.0018 and will be implemented prior to the commencement of any construction activity. The H&S Plan specifies types of personal protection equipment appropriate for the project, engineering controls, and environmental monitoring necessary to prevent worker exposures to soil impacts of polycyclic aromatic hydrocarbons (PAHs), metals, and/or petroleum hydrocarbons. Workers will be informed of the requirements of the H&S Plan and the plan will be available on-site throughout the course of the project.

6.0 EXCAVATION OVERSIGHT

EnviroTrac will provide oversight, as needed, during site work and construction. Excavation will primarily involve equipment that is widely used in the construction industry, such as excavators, earth movers and/or backhoes.

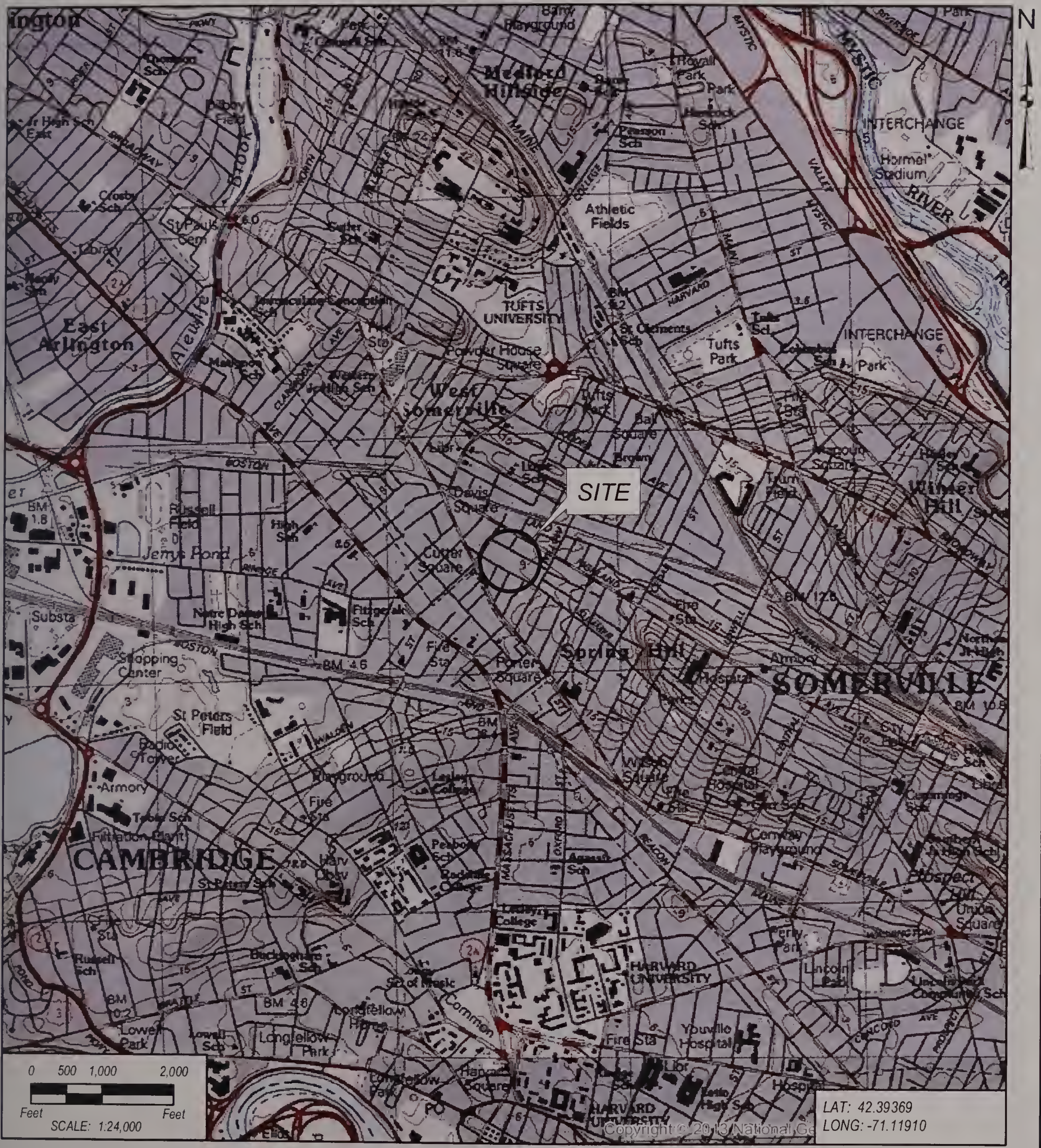
During excavation activities, soil will be observed for visual and olfactory evidence of a release of oil and/or hazardous materials to the environment. Soils will be visually inspected to evaluate for consistency with the findings and conclusions subsurface investigations conducted to date. Monitoring will include the identification of odor changes, color changes, and the presence of solid waste debris.

EnviroTrac will also collect selected soil samples to be screened for total ionizable compounds with a photoionization detector in accordance with the MassDEP Jar Headspace Method. Based on analytical data collected to date, volatile organic compounds (VOC) are not present on the site at concentrations exceeding MCP reporting criteria. Therefore, if soil potentially impacted with VOC is encountered, EnviroTrac will assist the contractor with soil segregation and will collect soil samples for soil disposal characterization parameters. Upon approval from an appropriate facility, the impacted soil will be properly transported off-site for disposal. EnviroTrac will also document the quantity of soil that is managed as Remediation Waste.

Excavated soil will be either live-loaded into trucks for transport to the appropriate disposal facility, or temporarily stockpiled on-site for logistical purposes. Soil that may be temporarily stockpiled will be placed on and under polyethylene sheeting, weighted to prevent wind damage. Soil erosion wattles will be placed around the perimeter of the stockpile.

All trucks transporting remediation waste from the site will be inspected prior to leaving the site to leaving the site. Soil adhered to the truck tires will be removed and collected for disposal.

FIGURES



SOURCE: OFFICE OF GEOGRAPHIC INFORMATION (MassGIS), COMMONWEALTH OF MASSACHUSETTS, MassIT.
USGS TOPOGRAPHIC MAPS: BOSTON NORTH AND BOSTON SOUTH, MA QUADRANGLES

EnviroTrac
Environmental Services

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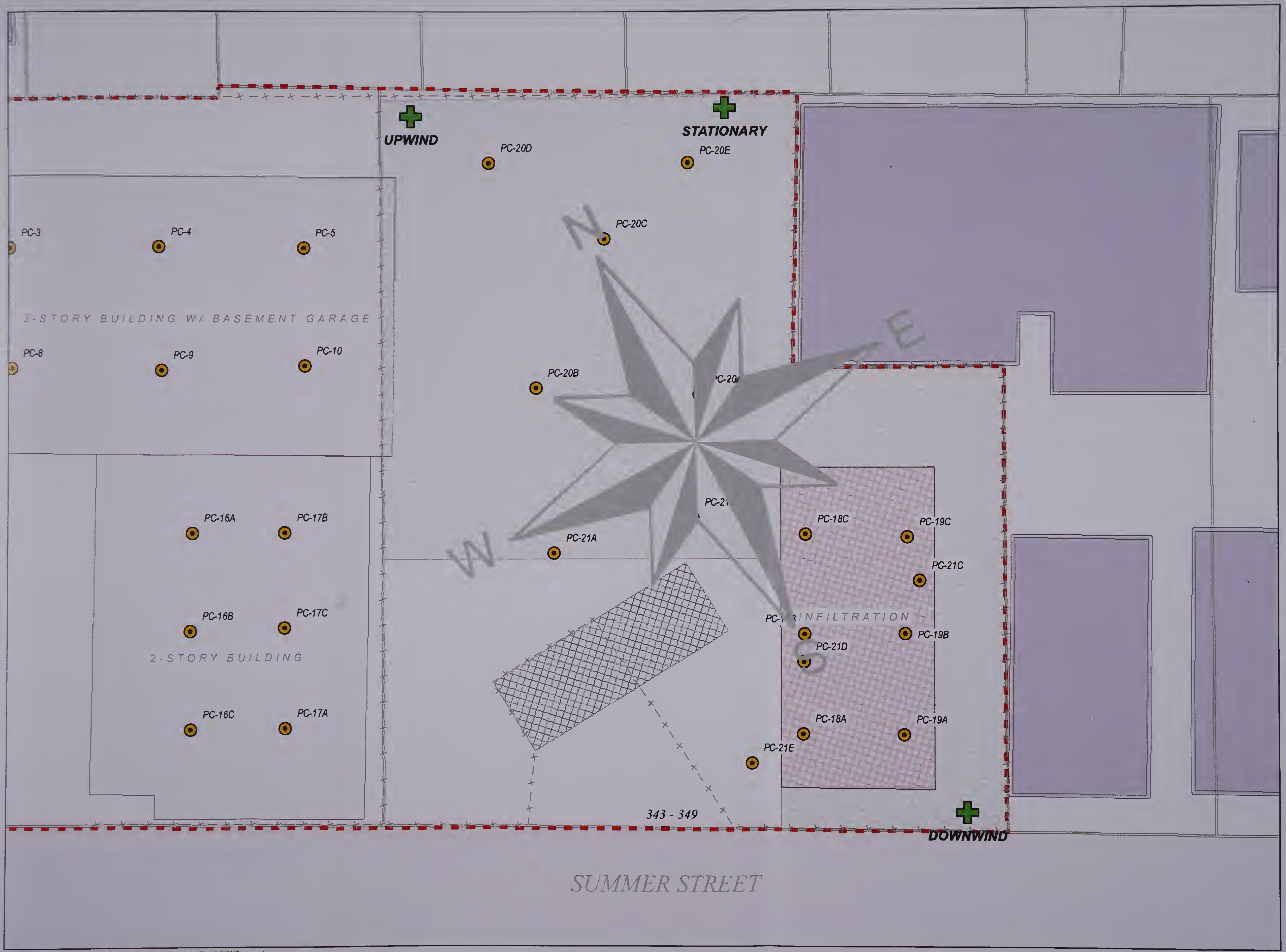
LOCUS MAP

343 - 351 SUMMER STREET
SOMERVILLE, MASSACHUSETTS

DRAWN BY	PROJECT	DATE	FIGURE
RHB	03.990202.01	4/23/2017	1



Document Path: C:\GIS Projects\Somerville\343 Summer St_Soil Management Plan_04242017_new.mxd

LEGEND

✚ DUST MONITORING

▨ EXISTING STRUCTURES

☐ PROPOSED IMPROVEMENTS

● DISPOSAL SAMPLE LOCATIONS

▨ MBTA VENT

× — × FENCE

SOIL EXPORT

☐ ARC (0-5 FT=380 CY)

☐ ARC (0-8 IN=250 CY)

Data Source: Office of Geographic Information (MassGIS), Commonwealth of Massachusetts, MassIT.

0 20 40

Feet Feet

APPROXIMATE SCALE

REVISED BY: RHB
REVISION DATE: 6/15/2017

FIGURE
1

DUST MONITORING LOCATIONS

351 SUMMER LLC
343-351 SUMMER STREET
SOMERVILLE, MASSACHUSETTS

EnviroTrac
Environmental Services

APPENDIX B

EnviroTrac

HEALTH AND SAFETY PLAN

Site Assessment & Contaminated Soil Removal

The Maggiore Companies
343-351 Summer Street
Somerville, Massachusetts

Prepared for:
The Maggiore Companies

Prepared By:
EnviroTrac Ltd.

Revisions:
Original: 7/28/2016

March 24, 2017

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1.0 INTRODUCTION

This Health and Safety Plan (HASP) has been prepared by EnviroTrac Ltd. (ET) to address the health and safety issues during the soil and groundwater assessment at two contiguous properties in Somerville, MA; 343-349 Summer St. and 351 Summer St., hereinafter referred to as the "Subject Site". Previous soil and groundwater investigations at the Subject Site have identified low levels of volatile organic compounds (VOCs), Extractable Petroleum Hydrocarbons (EPH) and heavy metals in the groundwater at the properties.

The procedures in this HASP were developed in accordance with the Occupational Safety and Health Administration (OSHA) Hazardous Waste Operations and Emergency Response (HazWOPER) Standard 29 CFR 1910.120 to protect site workers, the public, and the environment. Some of the hazardous materials have specific OSHA regulations, such as 29 CFR 1926.1101, which regulates Asbestos during construction and 29 CFR 1926.62, which regulates lead during construction.

The purpose of the HASP is to inform EnviroTrac employees, contractors, and subcontractors of the health and safety risks present at the facilities, and the proper methods of protecting themselves from those risks. Each worker must be fully aware of the risks associated with the work to be accomplished, and be dedicated to completing that work safely. Accordingly, project staff and approved EnviroTrac contractors must follow the policies and procedures established in this HASP. All personnel and/or visitors to the worksite must sign the HASP Agreement and Acknowledgment (**Appendix A**) to attest that he/she understands and agrees to abide by the provisions of this HASP. Anyone who cannot, or will not comply with this HASP will be excluded from on-site activities. Violations of this HASP, or any applicable federal, state, or local health and safety regulations must be reported immediately to the Designated Health and Safety Officer or to EnviroTrac's Director of Health and Safety. This HASP must be reviewed by all Site workers prior to conducting work at the Site and must be readily available on- site for reference, as necessary.

2.0 OBJECTIVES

The objective of this HASP is to protect on-site worker health and safety during field activities at the facility as well as the welfare of the public and the environment. The health and safety procedures in this plan have been established based on analysis of potential hazards at the facility and the activities/tasks associated with the work in order to alleviate the risks associated with the work to be performed. These procedures been designed to meet the following objectives:

1. Provide for the identification, recognition, evaluation, and control of health, safety, and environmental hazards;
2. Develop site specific procedures so personnel are not exposed to avoidable risks, accidents, or injuries in the performance of their duties;
3. Establish site specific monitoring and personal protection requirements to address exposure issues from potentially hazardous substances; and
4. Identify the roles and responsibilities of on-site and support personnel for the project.

3.0 SITE CHARACTERIZATION

The Subject Site consists of two contiguous parcels. 343-349 Summer St. contains an area of 16,799 square feet and is mostly vacant and covered with overgrown vegetation. The only structure on the parcel is a concrete foundation capped with steel grates that is used as an underground venting system for the MBTA Red Line, which runs beneath the southwestern corner of the parcel at a depth of approximately 20 feet below grade.

The 351 Summer St. parcel is abuts the 343-349 Summer St. parcel to the west and is a 23,594-square foot paved parking lot used by the abutting George Dilboy VFW Post #529.

4.0 WORK DESCRIPTION

EnviroTrac will conduct site assessment activities at the Subject Site. Activities to be completed include the following:

- Site reconnaissance to locate and determine status of existing groundwater monitoring wells;

- Monitoring the advancement of direct-push geoprobe borings;
- Obtaining soil samples for field screening and laboratory analysis;
- Monitoring installation of groundwater monitoring wells at boring;
- Overseeing completion of test pits in the vicinity of former underground storage tanks (USTs); and
- Sampling of groundwater monitoring wells;
- Monitoring well abandonment.

Upon initiation of new construction, soil removal will be conducted throughout the Site. EnviroTrac will conduct oversight and soil management activities in support of soil excavation and removal. Field activities include: visual and olfactory observations; the collection of soil samples for field screening; the separation and stock piling of soil on and under polyethylene sheeting based on suspected contaminants and field observations, and; the collection of soil samples for laboratory analysis for disposal precharacterization.

4.1 *PERSONNEL RESPONSIBILITIES*

Responsibilities of Personnel

Position	Job Description	Interactions
Project Manager Jennifer Buttaro	Responsible for technical and administrative performance of the project. Supports Site Supervisor and is available to him at all times. Will visit the site periodically, or as necessary. Reports progress of project on a regular basis. Assigns key personnel, and identifies requests, secures, and monitors use of resources for project. Approves project expenditures and invoices.	Is responsible to manage the project for EnviroTrac.
Site Supervisor Robert Bird	Acts as point of contact for client and client's representative(s). Supervises all on-site personnel and subcontractors. Coordinates daily site-specific work efforts, and ensures all activities are in strict compliance with site-specific health and safety plan. Has authority to suspend all work that possesses any health and safety risk. Briefs subordinate technical personnel on task requirements. Identifies and resolves technical problems. Provides periodic review of project progress.	Reports directly to Project Manager.
Site Health & Safety Officer (SHSO) Frank Morrissey (and alternates)	Assures compliance with HASP. Instructs site personnel in health and safety procedures through daily pre-work meetings. Performs any monitoring activities as required. Has authority to discontinue site operations if safety violations exist.	Reports directly to Project Manager. Works closely with Director, Health & Safety, and Site Supervisor.
Director, Health & Safety (DHS) Michael Clark	Develops, implements, and enforces the on-site safety project. Oversees all health and safety aspects of project, conducts periodic audits to ensure compliance. Available at all times to discuss project progress and health and safety related issues.	Reports directly to President/CEO of EnviroTrac. Works closely with Project Manager, Site Supervisor, and SHSO.

All site personnel and contract workers will have received the appropriate level of training necessary to perform applicable duties and comply with 29 CFR 1910.120 (aka: HazWOPER). For this project, training requirements are listed in SECTION 6 – PERSONNEL TRAINING of this HASP.

This HASP will be available to all on-site personnel, subcontractors, and visitors who access the work zone. Personnel responsible for HASP monitoring during on-site activities will be responsible for informing the field workers, subcontractors, and visitors of any changes in conditions and/or levels of protection required in the work zone.

4.2 *Exposure Hazard Evaluation*

Contaminant(s) of Concern:

- Volatile Organic Compounds (VOCs)
- Extractable Petroleum Hydrocarbons (associated with storage of heating oil)
- Heavy metals (associated with historical fill)
- Asbestos (associated with building materials)

Potential routes by which workers could be exposed generally include: inhalation, ingestion, dermal contact, and injection. The following control measures will be used alleviate exposure by routes of entry:

Control of Potential Exposure by Route of Entry	
Route of Entry	**Control of Potential Exposure**
INHALATION	Tasks associated with this project should not reasonably have a risk of exposure to inhalation hazards at or near published OSHA exposure limits and therefore, respiratory protection is not required during any task associated with this work. Should the OSHA action level for VOCs be exceeded based on ambient air monitoring, work will be suspended until the area can be ventilated. Once ambient air monitoring demonstrates vapor levels below the action limit following ventilation, work will resume. If there is a change in scope of work or environmental conditions, the SHSO will stop work and the new conditions will be evaluated for potential inhalation hazards. Work will not proceed until the new conditions are assessed and workers health is addressed.
INGESTION	Tasks associated with this project have a risk of exposure to chemicals or hazardous substances that pose mild to moderate toxicity if ingested. To control exposure, the following precautions will be followed by all site workers and visitors: • Follow good hygiene practices - wash hands, face, and exposed skin with soap and water after work and prior to eating, drinking, smoking, or applying cosmetics or lip balm, or immediately after contact with chemicals or hazardous substances. Do not touch mouth, nose, or eyes with unwashed hands or with used gloves. • Chemical-resistant gloves (e.g. nitrile, neoprene, or butyl rubber gloves) are to be worn during hands-on inspections, removing liquid or cleaning, handling chemicals or hazardous substances, or during other tasks that involve direct contact with chemicals or hazardous substances.
DERMAL CONTACT	Tasks associated with this project have a risk of exposure to chemicals or hazardous substances that pose mild to moderate toxicity through dermal contact, including contact with eyes. To control exposure, the following precautions will be followed by all site workers and visitors: • Follow good hygiene practices - wash hands, face, and exposed skin with soap and water after work and prior to eating, drinking, smoking, or applying cosmetics or lip balm, or immediately after contact with chemicals or hazardous substances. Do not touch mouth, nose, or eyes with unwashed hands or with used gloves. • Safety glasses with side shields that comply with ANSI Z87.1 requirements are to be worn at all times in the work zone. • Chemical-resistant gloves (e.g., nitrile) are to be worn during hands-on inspections, removing liquid or cleaning, handling chemicals or hazardous substances, or during other tasks that involve direct contact with chemicals or hazardous substances. • Safety shoes/boots that comply with ANSI Z41, ASTM F-2412, or ASTM F-2413 are to be worn when there is a danger of foot injuries due to falling or rolling objects, or objects piercing the sole. • Long pants and sleeved shirts are required to be worn at all times in the work zone.
INJECTION	Tasks associated with this project have a risk of exposure to chemicals, hazardous substances, and biological hazards that pose mild to moderate toxicity through injection. Injection is the puncturing or abrasion of the skin allowing toxins to enter the

	body. To control exposure, the following precautions will be followed by all site workers and visitors: • Abrasive-resistant or cut-resistant gloves (i.e., leather, Mechanix®, Kevlar-type, etc.) are to be worn while working with tools or manipulating objects that can cause cuts or abrasions to the hands. • Chemical-resistant gloves (e.g., nitrile) are to be worn during hands-on inspections, removing liquid or cleaning, handling chemicals or hazardous substances, or during other tasks that could result in direct contact with chemicals or hazardous substances. • Safety glasses with side shields that comply with ANSI Z87.1 requirements are to be worn at all times in the work zone. • Long pants and sleeved shirt are required to be worn at all times in the work zone. • Safety shoes/boots that comply with ANSI Z41, ASTM F-2412, or ASTM F-2413 are to be worn when there is a danger of foot injuries due to falling or rolling objects, or objects piercing the sole. • Be aware of biting/stinging/poisonous insects, poisonous or thorny plants, and any animal in the work zone and take precautions to avoid contact or exposure with these hazards.

4.3 *Site / Operational Hazard Evaluation*

Precautions must be taken to prevent injuries and exposures to the following potential hazards and implement control measure to reduce any potential risks identified on the next table.

Potential Site Hazards and Risk Characterization

Hazards	Risk Characterizations	Control Measures
SLIP/TRIP/FALL	Potential wet, or slippery conditions due to weather, on-site spills, on-site water, and drainage/runoff.	**Inspect/be aware of ground conditions and wet or slippery conditions.** **Use PPE to alleviate hazards, good boots, laced and tied; take small steps in slippery conditions, install handrails or use walking devices, like hiking poles.** **Use salt, calcium chloride, sand, or other material to alleviate slippery conditions and/or to melt snow/ice.**
	Potential slips, trips, and falls may result due to the proposed equipment and activities at the site like: drilling / excavation, well installation, system installation, loading/unloading, traffic control, etc.	**Clear trip hazards, when possible.** **Use good housekeeping practices and maintain the work zone free of debris and have equipment, supplies, and tools organized and out of main travel paths.** **Focus on path of travel and keep solid footing. Install handrails, steps, ramps, etc. to alleviate trip or fall hazards.**

INJURY TO BACK	Moving / lifting / carrying supplies, equipment, and materials around the work zone. Performing manual equipment operations such as shoveling, sweeping, raking, pushing (such as a wheel barrow), hand auguring, etc. Removal of well covers, manway covers, or manholes. Lifting and maneuvering cones and barriers to establish Work Zone Protection.	**Use proper lifting techniques: lift with legs, not back; keep load close to the body; do not twist torso, turn by moving your feet.** **Use proper bending techniques: bend at the knees, straighten back, lift and pull using legs, and do not use back or shoulders to lift up or pull.** **Use proper manual equipment techniques for shoveling, raking, sweeping: turn by moving your feet, do not twist torso, use legs not back** **Take breaks as needed to alleviate muscle and joint strain.** **Get help or use mechanical lifting equipment when loads exceed 50 lbs or as needed.**
INJURY TO FOOT/FEET	Injury from moving or dropping of equipment, supplies, drums, tanks, and buckets onto foot/feet. Feet being run over by vehicles or being crushed from lowering equipment like a tailgate lift or equipment footing.	**Wear ANSI/ASTM compliant safety boots with steel, composite, or aluminum toes while performing any tasks on site.** **Properly secure equipment and objects. Anticipate and recognize any potential conditions which may cause the dropping of equipment (i.e., ground conditions and wet, icy, or slippery conditions).** **Ensure proper clearance when lowering outriggers on equipment.**
INJURY TO HANDS	Sharps including glass, pieces of metal, wood, plastic, etc. during clean up and debris removal process. Potential pinch points/sharp edges during equipment handling, dropping of equipment on hands. Exposure to hazardous substances from the material stored in the tanks or possible contamination in soil/ground water.	**Debris should not be handled, use shovels, dust pans, etc., to pick up debris. If debris is required to be handled, use cut-resistant gloves (e.g., Kevlar).** **Abrasive-resistant or cut-resistant gloves (e.g., leather, Kevlar, etc.) are to be worn while working with tools, equipment, or manipulating objects that can cause cuts or abrasions to the hands.** **Wear chemical-resistant gloves (e.g. nitrile, neoprene, or butyl rubber gloves) during hands-on inspections, removing liquid or cleaning, handling chemicals or hazardous substances, or during other tasks that involve direct contact with chemicals or hazardous substances.**

INJURY TO HEAD AND EYES	Potential of being struck by overhead equipment such as drill rigs, or other equipment, material, and supplies around work site. Potential projectiles from equipment or surrounding environmental and remediation chemical spills during the proposed monitoring/sampling/injection activities. Potential of being sprayed or splashed in eyes or face while using liquid chemicals under pressure, such as subsurface injection of sodium permanganate. Potential of projectiles impacting face and eyes during preclearing of boreholes.	**Wear a hard hat in compliance with ET's Hard Hat Policy while in the Work Zone (certified ANSI Z89.1)** **Safety glasses with side shields that comply with ANSI Z87.1 requirements are to be worn at all times in the work zone.** **Full faceshield attached to the hard hat in addition to safety glasses with side shields that comply with ANSI Z87.1 requirements are to be worn while using airknife for preclearing, working with liquid chemicals, or similar activities that require the protection offered by a full faceshield.**
INJURY TO HEARING	Potential noise due to operating equipment during the proposed activities will not exceed the following levels at the designated durations: Duration Decibel Levels. (dB) (hrs) 8 90 6 92 4 95 3 97 2 100 1.5 102 1 105 0.5 110 <0.25 115	**Wear appropriate ear protection, such as:** **Ear Plugs:** **3M™ E-A-R™ Push-Ins™ corded foam earplugs (NRR 28 dB)** **Ear Muffs:** **MSA Cap Mounted Ear Muff Model: 10087422 (NRR 28)**
WORK IN HOT WEATHER CONDITIONS	Potential heat stress due to the warmer weather conditions (generally) late Spring through the Summer and into late Fall. Indoor and enclosed environments can produce heat stress related to activity, temperature, and lack of ventilation. Working in protective suites including Tyvek, Saranex, FRC, and Level A and Level B PPE. Chemical protective suites will attribute to heat stress in any weather and temperature conditions.	**Review weather forecast prior to going to site and plan accordingly.** **Use appropriate hot weather work apparel.** **Have fluids available on-site and ensure employees are hydrated, take frequent breaks in shade or air conditioned space, accordingly.** **Review OSHA Quick Card for: protecting Workers from Heat Stress.** **Follow requirements or EnviroTrac's Heat/Cold Stress Program.**

WORK IN COLD WEATHER CONDITIONS	Potential cold stress due to the cooler weather conditions (generally) late Fall through the Winter and into Spring. NOTE: Contact with water, being wet, and wet conditions (including rain) will exacerbate cold.	**Review weather forecast prior to going to site and plan accordingly.** **Cold conditions effect reaction time and decision making.** **Use appropriate protection from cold weather conditions including insulated gloves, neck and head coverings, insulated socks, and layering of clothing. Take breaks in warm areas as necessary.** **Protect from water and other wet conditions that can exacerbate cold conditions. Employees are not work in wet clothing.** **Review OSHA Quick Card for: protecting workers from Cold Stress.** **Follow requirements or EnviroTrac's Heat/Cold Stress Program.**
EXPOSURE TO PCBs, ASBESTOS, and/or LEAD	Potential exposure to PCBs, Asbestos, and/or lead during sample collection.	**Follow controls for dermal contact listed in the "Control of Potential Exposure by Route of Entry" section above.** **Refer to SDSs located in Appendix H**

HEAVY EQUIPMENT **Excavators** **Front End Loaders** **Skid Steers** **Cranes**	Potential struck-by, struck against, crushed, pinch points, and other hazard from working around heavy equipment such as excavator, front end loader, skid steers, etc.	**Equipment is to be inspected prior to operation. Defective equipment will not be operated until returned to functioning condition.** **Demark the area of travel and alert all site personnel know when equipment is being moved. Use a spotter to direct moving equipment.** **Have acknowledgement from operator before approaching equipment.** **Recognize the "swing zone" of the equipment and demark the area. Employees are to be informed of the hazards and location of swing zone.** **Inform employees of the pinch points associated with the equipment and how to avoid injury.** **Do not climb on equipment with feet over 6 feet above the ground without implementing fall protection.** **Turn off and lockout equipment before inspecting, maintaining, or repairing.** **Be aware of the potential of hydraulic fluid injection from equipment using high pressure hydraulic systems. Seek medical attention for hydraulic fluid injection injuries.**

EXCAVATION	Potential of injury from fall into excavation from leading edge. Potential of engulfment from collapse of excavation walls if in excavation. Potential asphyxiation, toxic gas exposure, or fire/explosion hazard from gasses that accumulate in excavation.	**Employees are to be aware of leading edge of excavation and do not enter an area within three (3) feet of the edge of the excavation.** **Excavations that are being entered are to be inspected and documented daily by an OSHA Competent Person.** **Excavations less than 5 ft in depth that are to be accessed, are to be constructed to prevent collapse of the sidewalls.** **Excavation greater than 5 ft in depth are required to have an excavation entry plan designed by a professional engineer.** **The atmosphere in the excavation will be sampled for VOC's, LEL, H2S, and oxygen content prior to entry. Ventilate trench if VOCs are over 50ppm, LEL is greater than 10%, H2S is greater than 10PPM, and/or oxygen content is less than 19.5 %.** **Follow ET's Ground Disturbance Practice.**

5.0 SITE CONTROL

5.1 *Site Work Zones*

Due to the low exposure risk of the contaminants of concern, an Exclusion Zone, Contaminate Reduction Zone, or Support Zone will not be required for this project. If site conditions or scope of work changes, work will be stopped and the need to establish zones will be reevaluated.

5.2 *Spill Containment and Control Procedures*

The following procedures should be followed by on-site personnel in the event of a release of vehicle or equipment fluids:

1. Use proper PPE for handling potential chemical exposure including: safety glasses with side shields, nitrile gloves, sleeved shirts, full-length pants, and safety shoes;
2. Control sensitive receptors such as storm drains, surface water, and soil;
3. Prevent further flow of the material;
4. Contain the discharged material;
5. Vacuum, sweep up, or shovel the material and place into a suitable DOT disposal container for isolation for disposal;
6. Thoroughly wash the area after a spill or leak clean-up;
7. Provide adequate ventilation;
8. Keep combustibles away from the spilled material;
9. In case of large spills, follow all facility emergency response procedures.

5.3 *Fire Prevention*

To protect and prevent against accidental fire hazards, safe work practices will be followed:

1. Smoking is prohibited on site and in ET vehicles.
2. In the event of fire, 1) notify all site occupants of fire and to evacuate area, 2) gather at established primary or secondary muster point, and 3) contact emergency services.
3. At least one (1) ABC/BC rated fire extinguisher (minimum 10 lbs) will be available on site and is to be used according to manufacturer's specifications and guidelines. Only trained personnel are to use an extinguisher and only on incipient fires.
4. Follow ET's Practice for *Hot Works* procedures when using primary or secondary source ignition equipment. A PID will be used to detect flammable atmospheres. If flammable atmospheres are detected at or above 10% of the LEL, work will stop and all sources of ignition will be contained until the source can be determined and eliminated.
5. Keep flammable liquids in closed containers and away from any possible source of ignition (electric service boxes, remediation enclosures, vehicle exhausts).
6. Keep site clean of debris.

5.4 *Control of Hazardous Energy and Underground Facility Identification*

Follow the requirements listed for the Control of Hazardous Energy, including procedures for Lockout/Tagout, in the ET Health & Safety Manual, section 27 – *Control of Hazardous Energy*.

Prior to any ground disturbance activities, both private and public utility mark outs will be conducted and respected during activities. Soft dig techniques will be used prior to any drilling or excavation activities and follow procedures in the ET Health & Safety Manual, section 28 – *Ground Disturbance* Program.

5.5 *Emergency Notification*

In the event of a personal injury, motor vehicle accident, or other incident, the Site Safety Officer will follow ET's Personal Injury Accident Procedures and/or Motor Vehicle Accident Procedures listed in **Appendix B**. Contact and emergency numbers are also located in **Appendix B**.

Directions to the nearest Hospital and the nearest ET designated contract medical facility are located in **Appendix G**. Incidents are to be reported on the ET Incident Reporting form located in **Appendix C**.

5.6 *Site Communications*

Verbal communication will be the primary means of communication. Cell phones and other communications devices will be used as necessary.

5.7 *Site Security*

The area is monitored and non-essential personnel will not be allowed in the areas of remediation activities. All equipment, materials, and supplies left overnight will be secured to prevent slip/trip/fall hazards. Facility contact and emergency numbers are also located in **Appendix B**.

5.8 *Traffic Control and Work Zone Protection*

Employees exposed to vehicular traffic on or near active traffic patterns will wear Class 2 high-visibility attire. Traffic at the work zone is to be controlled using proper Work Zone Protection according to the requirements of the Manual on Uniform Traffic Control Devices (MUTCD) and ET Work Zone Protection Practice. Traffic safety cones will be installed during all site activities to control and designate the work exclusion zone on the site. It is the responsibility of the all on site personnel to ensure proper safety measures are implemented or adjusted during site activities for worker safety.

5.9 *Site Illumination*

Work will be performed during normal working hours using natural lighting. If it is necessary to conduct work outside normal working hours, artificial lighting will be set up in the work area to provide sufficient illumination. Flash lights are to be used for illumination as needed. Workers are not to perform tasks in the dark or insufficient lighting.

5.10 *Noise Control*

Follow the requirements listed for the noise control and hearing protection in the ET Health & Safety Manual, section 20 – *Hearing Protection Program*.

5.11 *Assured Electrical Grounding*

Any required electrical power connections will be equipped with Ground Fault Circuit Interrupters (GFI/GFCI) at the source of the power. Electrical cords are to be inspected prior to use and not used if the insulation has been compromised or if wires are exposed, if the cord has been kinked, or if the grounding plug is missing.

5.12 *Lightning Safety Plan*

- Establish a location during Daily Tailgate Safety meeting where people will go in the event lightning or thunder storms are predicted or possible;
- Use the 30/30 rule – suspend activities when "flash to bang" (lightning to thunder) is within 30 seconds , and resume work 30 minutes after the last flash or bang; and
- Follow the plan without exception.

5.13 *General Work Rules*

To protect against the occurrence of accidents and dangerous situations, as well as to minimize the potential for emergency events, all on-site personnel shall:

1. Read and sign this HASP prior to beginning of all on-site activities. The HASP will be reviewed periodically by all personnel conducting field activities and visitors to the work zone.
2. Conduct field work only be during daylight hours unless supplemental lighting is provided.
3. Do not eat, drink, or smoke in the work zone.
4. Be knowledgeable in the use of first-aid equipment.
5. Maintain sufficient quantities of absorbent/spill collection materials to address a spill or release that may occur during work.

To minimize the possibility of injuries, the following general precautions will be taken:

1. All hand and power tools will be inspected prior to use and maintained in a safe condition.
2. Safety guards will be kept in place during use.
3. Power tools will be double-insulated and all electric cords will be connected through GFI protective circuitry.
4. Walkways will be kept clear of equipment, supplies, excavated material, or other obstructions.
5. Proper work gloves will be provided and used, as required.
6. Hard hats are to be worn if required by the location or activity (refer to ET's Hardhat Policy).
7. Sturdy, enclosed work or safety shoes/boots are to be worn, as required by the activity.
8. Employees exposed to vehicular traffic on or near public roads will wear high-visibility attire. Traffic at the work zone is to be controlled using proper Work Zone Protection according to the requirements of the Manual on Uniform Traffic Control Devices (MUTCD).
9. Employees will observe proper lifting techniques and obey sensible lifting limits and get assistance

when required.

5.14 *Health and Safety Responsibilities*

All Project Personnel are responsible to:

1. Take all reasonable precautions to prevent injury to themselves, to their fellow employees, and to the public.
2. Implement the requirements of this HASP and report any deviations from the procedures listed or the conditions described.
3. Perform only those tasks that they believe can be done safely and immediately report any accidents, unsafe conditions, or near misses according to ET's On The Job Accident Procedures and complete the required ET Incident Reporting Forms.
4. **Stop Work** whenever the risk associated with the work is not clearly understood, established, or controlled. Work will not commence until the conditions that caused the Stop Work intervention have been addressed, corrected, or resolved. Any and all workers on the site have the authority and responsibility to initiate a stop work intervention.

5.15 *Decontamination*

Follow the requirements listed for the decontamination of personnel and equipment in the ET Health & Safety Manual, section 31 – *Decontamination.*

6.0 PERSONNEL TRAINING

Field team personnel associated with activities that have a potential for exposure to hazardous substances are required to participate in a health and safety training program that complies with the OSHA standard 29 CFR 1910.120 (aka: HazWOPER) and 1910.1200 (aka: HazCom). This program instructs employees on general health and safety principles and procedures, proper operation of monitoring instruments, and use of personnel protective equipment.

In addition, field team personnel must undergo site-specific training prior to the start-up of any given project or task. As activities change at a particular work site, related training must be provided as necessary. The site-specific training will address potential hazards and associated risks, site operating procedures, emergency response and site control methods to be employed. The following training is required to perform tasks at this site:

TRAINING REQUIREMENTS FOR SITE TASKS

Task	Training Required
General site operations	• OSHA standard 29 CFR 1910.120 (aka: HazWOPER) • OSHA standard 29 CFR 1910.1200 (aka: HazCom) • First Aid/CPR (at least one (1) worker on-site must be certified in First Aid/CPR) • Requirements of ET's Health and Safety Program and this HASP • API WorkSafe certification
Operator of other heavy equipment	• Training on operations of equipment per manufacturers specifications.
Sampling of building materials	• On-the-Job (OTJ) training on collecting and packing samples, preparing chain of custody, and other required documentation.

6.1 *Personal Protective Equipment*

Based on available data, it is anticipated that all field activities will be performed at **Level D protection**. Personal protection at Level D will consist of the following based on task performed:

PERSONAL PROTECTIVE EQUIPMENT BY TASK	
Task	**PPE**
All Site Tasks	• **Hard hats** are to be worn, if required by the location or activity per to ET's Hardhat Policy. • **Safety glasses with side shields** (ANSI Z-87 + certified) or full-face safety shields are to be worn at all times while on-site. • **Proper gloves** will be provided and used, as required. Abrasion resistant gloves (i.e., leather or similar) and chemical resistant, gauntlet style gloves (i.e., nitrile/neoprene/butyl rubber) will be used as tasks require. Cut-resistant gloves shall be used when working with razor knives. • **Safety boots** (ANSI Z-41, ASTM F-249, or ASTM F-2413 compliant) are to be worn, as required by the activity, laced and tied. • **High-visibility attire**, i.e., Class 2, Safety Vests, are to be worn when employees are exposed to vehicular traffic. • **Long pants and sleeved shirts** will be worn while on site. • **Chemical protective outerwear (Tyvek)** as needed to protect clothing from being over soiled and contamination in soil and dirt.

6.2 *First-Aid Supplies and Safety Equipment*

First-Aid supplies will be available to all personnel on site including an eyewash kit/station. All first aid supplies are to be periodically inspected for sufficient quantities and expiration date and restocked accordingly. At least one (1) ABC/BC rated fire extinguisher (minimum 10 lbs) will be available on site and is to be used according to manufacturer's specifications and guidelines. Only trained personnel are to use an extinguisher and only on incipient fires.

6.3 *Heat Stress / Cold Stress Prevention*

Follow the requirements listed for heat stress and/or cold stress procedures, as climate conditions require, in the ET Health & Safety Manual, section 25 – *Heat Stress / Cold Stress Policy*. OSHA Quick Cards for Heat Stress and Cold Stress are included in **Appendix D**.

7.0 MEDICAL SURVEILLANCE

A medical surveillance program will be instituted for those employees who:

1. are or may be exposed to hazardous substances or health hazards at or above the established permissible exposure limit without regard to the use of respirators, for 30 days or more a year;
2. wear a respirator for 30 days or more a year or as required by 29 CFR 1910.134 (OSHA Respiratory Protection Standard);
3. are injured, become ill, or develop signs or symptoms due to possible overexposure involving hazardous substances or health hazards from an emergency response or hazardous waste operation; or
4. are members of HAZMAT teams.

Employees will be medially evaluated and qualified prior to being fit tested for a respirator or prior to being required to enter a confined space. Records will be retained according to legal requirements.

Employees exposed to noise thresholds equal or exceeding an 8-hour time-weighted average of 85 decibels will participate in an audiometric testing program.

All medical and monitoring records will be retained according to legal requirements and available to employees upon request to the Director of Health and Safety.

8.0 CONFINED SPACE ENTRY PROCEDURES

Entry into a confined space is beyond the scope of this project. No employees are to enter a confined space to perform any task associated with this work.

If Confined Space Entry (CSE) is required, a confined entry safety plan will be developed and a CSE Permit will be issued prior to allowing employees to enter a confined space.

APPENDIX A

HASP AGREEMENT
AND ACKNOWLEDGEMENT

Acknowledgement Agreement

HEALTH AND SAFETY PLAN REVIEW RECORD

I acknowledge that I have read and understood the contents of this Health and Safety Plan and Job Safety Analysis (JSA's) for the work and I agree to abide by all provisions as set forth.

If unidentified or new hazards not listed in this HASP or JSA's are identified or if the scope of work changes, I will report these finding to the Site Safety Officer and work will stop and not re-start work until contingencies and/or control measures are in place to address the hazards.

NAME & SIGNATURE	DATE & CELL PHONE NUMBER

Add additional sheets as necessary

APP A
HASP Sign-
in Log

APPENDIX B

INCIDENT REPORTING

- Personal Injury Accident Procedures
- Motor Vehicle Accident Procedures

Contact and emergency phone numbers for this project:

CHA Somerville Hospital	617-591-4500

230 Highland Avenue, Somerville, MA 02143

All Emergencies	911
National Response Center	800-424-8802
National Poison Control	800-926-1253

ET CONTACTS

Craig Blake (Senior Project Manager)	Office: 781-793-0074 Cell 781-929-1474
Sean Kennedy (Regional Operations Manager)	Office: 781-793-0074 Cell: 508-958-6544
Michael Clark (Director of Health and Safety)	Office: 609-387-5553 Cell: 516-790-0998

APPENDIX C

ENVIROTRAC'S
INCIDENT REPORTING FORM

EnviroTrac
Environmental Services

INCIDENT AND NEAR MISS REPORTING FORM

1.Name of person(s) involved:		2. Title of person(s) involved:
3. Type: Personal Injury Motor Vehicle Accident		Property Damage Stop Work Intervention Near Miss
4. Date & Time of Incident: Date: ___________ Time: ___________ (indicate AM or PM)		5. Location (physical location and street address)
6. Client:		
7. Name of person completing form:		8.Title of person completing form:
9. ET reg office:	10. Contact phone number(s):	11. Witness name(s) & phone numbers:

12. Full Description of Incident: (if incident involves vehicle, provide identification information)

(Describe in detail: weather during the incident, physical attributes of the location, what was happening prior to the incident including procedures being followed, the actual incident, failure of equipment, results of the incident, description of vehicle or property involved, etc. Use additional sheets if necessary.)

INCIDENT AND NEAR MISS REPORTING FORM

1.Name of person(s) involved:	2. Title of person(s) involved:

3. Type: Personal Injury Motor Vehicle Accident Property Damage Stop Work Intervention Near Miss

4. Date & Time of Incident: Date: ___________ Time: ___________ (indicate AM or PM)	5. Location (physical location and street address)
6. Client:	

13. List Personal Protective Equipment (PPE) used during the incident, if applicable:

14. Corrective Actions: (What should be done to prevent recurrence of this incident, i.e., employee training, modify procedures, different equipment, etc.?)

15. Miscellaneous information: (Provide any other information or recommendations which you feel are pertinent to this incident. Use this section to list any Police or government agency information, report numbers, contact information, etc.)

EnviroTrac
Environmental Services

INCIDENT AND NEAR MISS REPORTING FORM

1.Name of person(s) involved:	2. Title of person(s) involved:
3. Type: Personal Injury Motor Vehicle Accident	Property Damage Stop Work Intervention Near Miss
4. Date & Time of Incident: Date: ____________ Time: ____________ (indicate AM or PM)	5. Location (physical location and street address)
6. Client:	

MOTOR VEHICLE INCIDENT DIAGRAM
(MUST BE COMPLETED FOR ALL MOTOR VEHICLE ACCIDENTS)

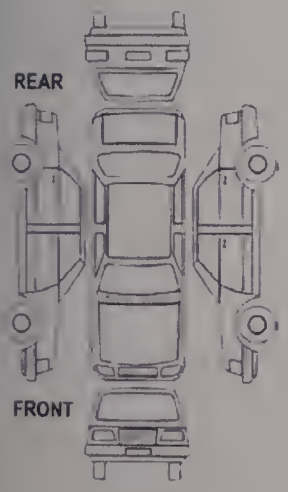
○
Indicate
North by
Arrow

Draw a diagram of the roadway or streets where crash occurred, indicating vehicles involved and direction of travel. Use the follow symbols:

1 = Vehicle 1 (your vehicle)
2 = Vehicle 2, Vehicle 3, etc...
○ = pedestrian, animal, non-driver
→ = Direction of travel

Indicate damage to vehicle(s):

Your Vehicle



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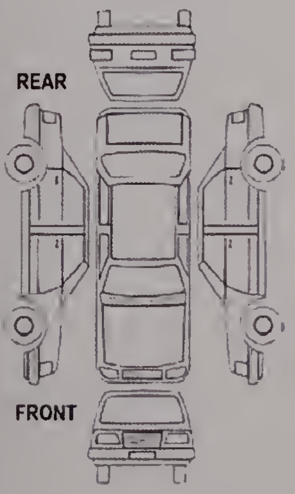
Other Vehicle



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EnviroTrac
Environmental Services

INCIDENT AND NEAR MISS REPORTING FORM

1.Name of person(s) involved:	2. Title of person(s) involved:
3. Type: Personal Injury Motor Vehicle Accident	Property Damage Stop Work Intervention Near Miss
4. Date & Time of Incident: Date: ____________ Time: ____________ (indicate AM or PM)	5. Location (physical location and street address)
6. Client:	

MOTOR VEHICLE INCIDENT INFORMATION

Company Vehicle (vehicle 1):

Make / Model: ______________________________

EnviroTrac Vehicle No.: ______________________________

Other Vehicle (vehicle 2):

Make / Model /Yr ______________________________

License Plate No: ______________________________

Driver's Name: ______________________________

Address: ______________________________

Phone No: ______________________________

Driver's License No. & ST: ______________________________

Insurance Co / Policy No: ______________________________

Other Vehicle (vehicle 3):

Make / Model /Yr ______________________________

License Plate No: ______________________________

Driver's Name: ______________________________

Address: ______________________________

Phone No: ______________________________

Driver's License No. & ST: ______________________________

Insurance Co / Policy No: ______________________________

Include any other pertinent information:
(witness name & contact no., injured parties including medical treatment provided and where taken, Police Officer name and badge no., any else to assist in the investigation/claim)

APPENDIX D

OSHA QUICK CARDS FOR:
HEAT STRESS
COLD STRESS

OSHA® QUICK CARD™

Protecting Workers from Heat Stress

Heat Illness

Exposure to heat can cause illness and death. The most serious heat illness is heat stroke. Other heat illnesses, such as heat exhaustion, heat cramps and heat rash, should also be avoided.

There are precautions your employer should take any time temperatures are high and the job involves physical work.

Risk Factors for Heat Illness

- High temperature and humidity, direct sun exposure, no breeze or wind
- Low liquid intake
- Heavy physical labor
- Waterproof clothing
- No recent exposure to hot workplaces

Symptoms of Heat Exhaustion

- Headache, dizziness, or fainting
- Weakness and wet skin
- Irritability or confusion
- Thirst, nausea, or vomiting

Symptoms of Heat Stroke

- May be confused, unable to think clearly, pass out, collapse, or have seizures (fits)
- May stop sweating

To Prevent Heat Illness, Your Employer Should

- Provide training about the hazards leading to heat stress and how to prevent them.
- Provide a lot of cool water to workers close to the work area. At least one pint of water per hour is needed.

For more information:

OSHA® Occupational Safety and Health Administration
U.S. Department of Labor
www.osha.gov (800) 321-OSHA (6742)

OSHA 3154-09-11R

OSHA® QUICK CARD™

- Schedule frequent rest periods with water breaks in shaded or air-conditioned areas.
- Routinely check workers who are at risk of heat stress due to protective clothing and high temperature.
- Consider protective clothing that provides cooling.

How You Can Protect Yourself and Others

- Know signs/symptoms of heat illnesses; monitor yourself; use a buddy system.
- Block out direct sun and other heat sources.
- Drink plenty of fluids. Drink often and BEFORE you are thirsty. Drink water every 15 minutes.
- Avoid beverages containing alcohol or caffeine.
- Wear lightweight, light colored, loose-fitting clothes.

What to Do When a Worker is Ill from the Heat

- Call a supervisor for help. If the supervisor is not available, call 911.
- Have someone stay with the worker until help arrives.
- Move the worker to a cooler/shaded area.
- Remove outer clothing.
- Fan and mist the worker with water; apply ice (ice bags or ice towels).
- Provide cool drinking water, if able to drink.

IF THE WORKER IS NOT ALERT or seems confused, this may be a heat stroke. CALL 911 IMMEDIATELY and apply ice as soon as possible.

If you have any questions or concerns, call OSHA at 1-800-321-OSHA (6742).

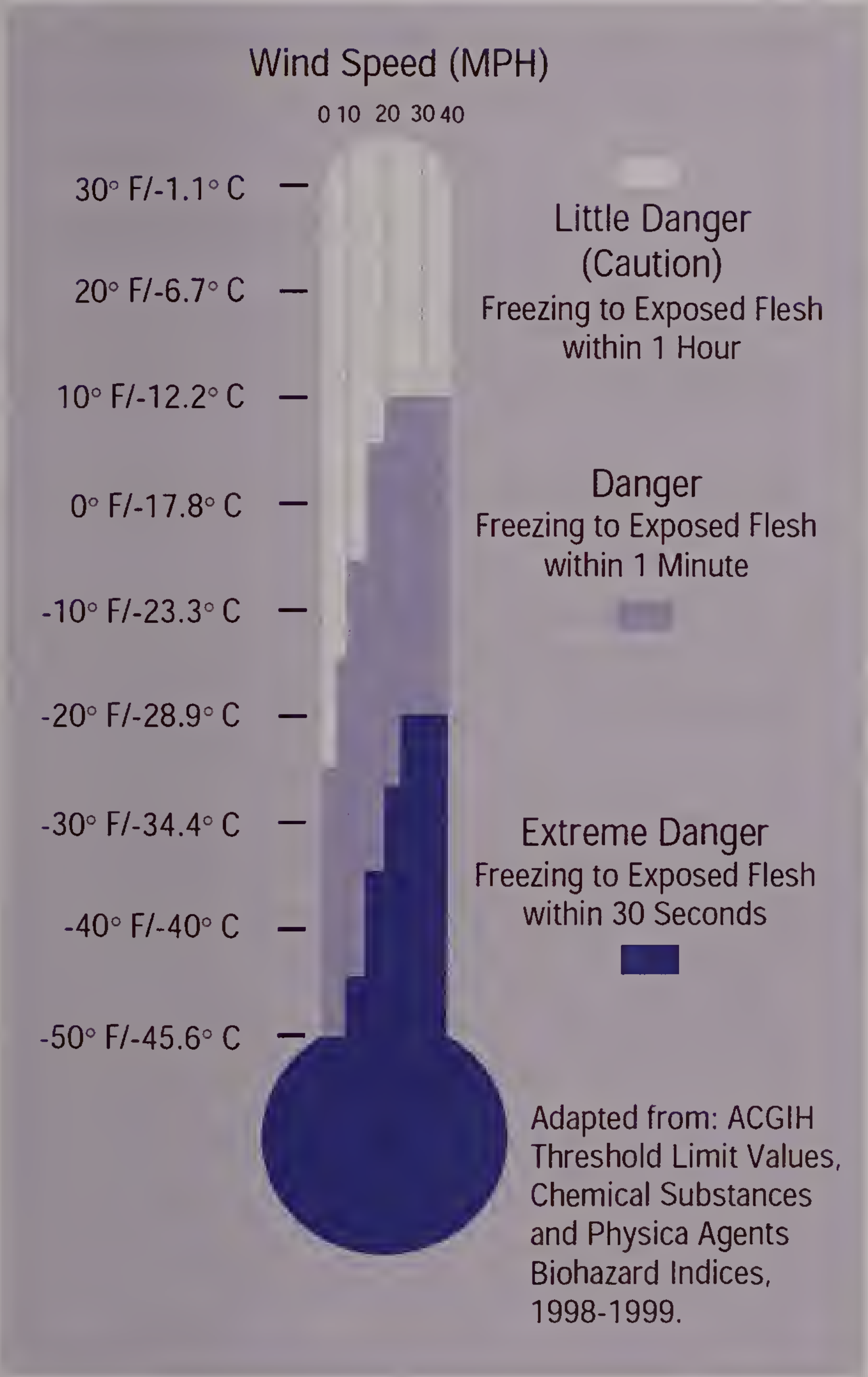
For more information:

OSHA® **Occupational Safety and Health Administration**
U.S. Department of Labor
www.osha.gov (800) 321-OSHA (6742)

THE COLD STRESS EQUATION

LOW TEMPERATURE + WIND SPEED + WETNESS = INJURIES & ILLNESS

When the body is unable to warm itself, serious cold-related illnesses and injuries may occur, and permanent tissue damage and death may result. **Hypothermia** can occur when *land temperatures* are **above** freezing or *water temperatures* are below 98.6°F/ 37°C. Cold-related illnesses can slowly overcome a person who has been chilled by low temperatures, brisk winds, or wet clothing.



Adapted from: ACGIH Threshold Limit Values, Chemical Substances and Physica Agents Biohazard Indices, 1998-1999.

U.S. Department of Labor
Occupational Safety and Health Administration

OSHA 3156
1998

FROST BITE

What Happens to the Body:

FREEZING IN DEEP LAYERS OF SKIN AND TISSUE; PALE, WAXY-WHITE SKIN COLOR; SKIN BECOMES HARD and NUMB; USUALLY AFFECTS THE FINGERS, HANDS, TOES, FEET, EARS, and NOSE.

What Should Be Done: (land temperatures)

- Move the person to a warm dry area. Don't leave the person alone.
- Remove any wet or tight clothing that may cut off blood flow to the affected area.
- **DO NOT** rub the affected area, because rubbing causes damage to the skin and tissue.
- **Gently** place the affected area in a warm (105°F) water bath and monitor the water temperature to **slowly** warm the tissue. Don't pour warm water directly on the affected area because it will warm the tissue too fast causing tissue damage. Warming takes about 25-40 minutes.
- After the affected area has been warmed, it may become puffy and blister. The affected area may have a burning feeling or numbness. When normal feeling, movement, and skin color have returned, the affected area should be dried and wrapped to keep it warm. **NOTE:** If there is a chance the affected area may get cold again, do not warm the skin. If the skin is warmed and then becomes cold again, it will cause severe tissue damage.
- Seek medical attention as soon as possible.

HYPOTHERMIA - (Medical Emergency)

What Happens to the Body:

NORMAL BODY TEMPERATURE (98.6° F/37°C) DROPS TO OR BELOW 95°F (35° C); FATIGUE OR DROWSINESS; UNCONTROLLED SHIVERING; COOL BLUISH SKIN; SLURRED SPEECH; CLUMSY MOVEMENTS; IRRITABLE, IRRATIONAL OR CONFUSED BEHAVIOR.

What Should Be Done: (land temperatures)

- Call for emergency help (i.e., Ambulance or Call 911).
- Move the person to a warm, dry area. Don't leave the person alone. Remove any wet clothing and replace with warm, dry clothing or wrap the person in blankets.
- Have the person drink warm, sweet drinks (sugar water or sports-type drinks) if they are alert. **Avoid drinks with caffeine** (coffee, tea, or hot chocolate) or alcohol.
- Have the person move their arms and legs to create muscle heat. If they are unable to do this, place warm bottles or hot packs in the arm pits, groin, neck, and head areas. **DO NOT** rub the person's body or place them in warm water bath. This may stop their heart.

What Should Be Done: (water temperatures)

- Call for emergency help (Ambulance or Call 911). Body heat is lost up to 25 times faster in water.
- **DO NOT** remove any clothing. Button, buckle, zip, and tighten any collars, cuffs, shoes, and hoods because the layer of trapped water closest to the body provides a layer of insulation that slows the loss of heat. Keep the head out of the water and put on a hat or hood.
- Get out of the water as quickly as possible or climb on anything floating. **DO NOT** attempt to swim unless a floating object or another person can be reached because swimming or other physical activity uses the body's heat and reduces survival time by about 50 percent.
- If getting out of the water is not possible, wait quietly and conserve body heat by folding arms across the chest, keeping thighs together, bending knees, and crossing ankles. If another person is in the water, huddle together with chests held closely.

How to Protect Workers

- Recognize the environmental and workplace conditions that lead to potential cold-induced illnesses and injuries.
- Learn the signs and symptoms of cold-induced illnesses/injuries and what to do to help the worker.
- Train the workforce about cold-induced illnesses and injuries.
- Select proper clothing for cold, wet, and windy conditions. Layer clothing to adjust to changing environmental temperatures. Wear a hat and gloves, in addition to underwear that will keep water away from the skin (polypropylene).
- Take frequent short breaks in warm dry shelters to allow the body to warm up.
- Perform work during the warmest part of the day.
- Avoid exhaustion or fatigue because energy is needed to keep muscles warm.
- Use the buddy system (work in pairs).
- Drink warm, sweet beverages (sugar water, sports-type drinks). Avoid drinks with caffeine (coffee, tea, or hot chocolate) or alcohol.
- Eat warm, high-calorie foods like hot pasta dishes.

Workers Are at Increased Risk When…

- They have predisposing health conditions such as cardiovascular disease, diabetes, and hypertension.
- They take certain medication (check with your doctor, nurse, or pharmacy and ask if any medicines you are taking affect you while working in cold environments).
- They are in poor physical condition, have a poor diet, or are older.

APPENDIX E

DAILY TAILGATE SAFETY MEETING LOG

Daily Tailgate Safety Meeting Log

(to be completed on site)

Site Name____

Scope of Work ______________________________________

Weather ____

Safety Topics discussed __________________________________

____

____

Employee Names:	Signatures

By signing, I acknowledge that I am knowledgeable of the scope of work being performed, the associated hazards, and will institute the controls or contingencies necessary to mitigate those hazards. Furthermore, I will stop work in the event there are new or unidentified hazards and will not commence until proper controls or contingencies are instituted to mitigate those hazards.

Signature of Site Safety Officer (or designee)____________________ Date __________

Add additional sheets as necessary

APPENDIX F

SAFETY DATA SHEETS

(SDS)

SIGMA-ALDRICH

sigma-aldrich.com

SAFETY DATA SHEET

Version 5.9
Revision Date 05/28/2016
Print Date 06/16/2016

1. PRODUCT AND COMPANY IDENTIFICATION

1.1 Product identifiers

Product name : TPH in Soil - PT

Product Number : SPE026
Brand : Sigma-Aldrich

1.2 Relevant identified uses of the substance or mixture and uses advised against

Identified uses : Laboratory chemicals, Synthesis of substances

1.3 Details of the supplier of the safety data sheet

Company : Sigma-Aldrich
3050 Spruce Street
SAINT LOUIS MO 63103
USA

Telephone : +1 800-325-5832
Fax : +1 800-325-5052

1.4 Emergency telephone number

Emergency Phone # : (314) 776-6555

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)
Carcinogenicity (Category 1A), H350
Specific target organ toxicity - repeated exposure, Inhalation (Category 2), H373

For the full text of the H-Statements mentioned in this Section, see Section 16.

2.2 GHS Label elements, including precautionary statements

Pictogram

Signal word Danger

Hazard statement(s)

H350	May cause cancer.
H373	May cause damage to organs through prolonged or repeated exposure if inhaled.

Precautionary statement(s)

P201	Obtain special instructions before use.
P202	Do not handle until all safety precautions have been read and understood.
P260	Do not breathe dust/ fume/ gas/ mist/ vapours/ spray.
P280	Wear protective gloves/ protective clothing/ eye protection/ face protection.
P308 + P313	IF exposed or concerned: Get medical advice/ attention.
P405	Store locked up.
P501	Dispose of contents/ container to an approved waste disposal plant.

2.3 Hazards not otherwise classified (HNOC) or not covered by GHS - none

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.2 Mixtures

Hazardous components

Component		Classification	Concentration
Quartz			
CAS-No. EC-No.	14808-60-7 238-878-4	Carc. 2; STOT RE 2; H351, H373	>= 90 - <= 100 %
Baseoil - unspecified			
CAS-No. EC-No. Index-No.	64742-65-0 265-169-7 649-474-00-6	Carc. 1B; H350	>= 0.1 - < 1 %
Fuel oil no. 2			
CAS-No. EC-No. Index-No.	68476-30-2 270-671-4 649-225-00-1	Carc. 2; H351	>= 0.1 - < 1 %

For the full text of the H-Statements mentioned in this Section, see Section 16.

4. FIRST AID MEASURES

4.1 Description of first aid measures

General advice
Consult a physician. Show this safety data sheet to the doctor in attendance.Move out of dangerous area.

If inhaled
If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

In case of skin contact
Wash off with soap and plenty of water. Consult a physician.

In case of eye contact
Flush eyes with water as a precaution.

If swallowed
Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

4.2 Most important symptoms and effects, both acute and delayed

The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

4.3 Indication of any immediate medical attention and special treatment needed

No data available

5. FIREFIGHTING MEASURES

5.1 Extinguishing media

Suitable extinguishing media
Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

5.2 Special hazards arising from the substance or mixture

No data available

5.3 Advice for firefighters

Wear self-contained breathing apparatus for firefighting if necessary.

5.4 Further information

No data available

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. Avoid dust formation. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. Avoid breathing dust.
For personal protection see section 8.

6.2 Environmental precautions

Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

6.3 Methods and materials for containment and cleaning up

Pick up and arrange disposal without creating dust. Sweep up and shovel. Keep in suitable, closed containers for disposal.

6.4 Reference to other sections

For disposal see section 13.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling

Avoid contact with skin and eyes. Avoid formation of dust and aerosols.Further processing of solid materials may result in the formation of combustible dusts. The potential for combustible dust formation should be taken into consideration before additional processing occurs.
Provide appropriate exhaust ventilation at places where dust is formed.
For precautions see section 2.2.

7.2 Conditions for safe storage, including any incompatibilities

Keep container tightly closed in a dry and well-ventilated place.

Store at Room Temperature.
Storage class (TRGS 510): Non-combustible, acute toxic Cat.3 / toxic hazardous materials or hazardous materials causing chronic effects

7.3 Specific end use(s)

Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

Components with workplace control parameters

Component	CAS-No.	Value	Control parameters	Basis
Quartz	14808-60-7	TWA	0.025 mg/m3	USA. ACGIH Threshold Limit Values (TLV)
	Remarks	Suspected human carcinogen		
		TWA	0.025 mg/m3	USA. ACGIH Threshold Limit Values (TLV)
		Lung cancer Pulmonary fibrosis Suspected human carcinogen		
Baseoil - unspecified	64742-65-0	TWA	5.000000 mg/m3	USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
		Upper Respiratory Tract irritation Exposure by all routes should be carefully controlled to levels as low as possible. Suspected human carcinogen		
		TWA	5.000000 mg/m3	USA. ACGIH Threshold Limit Values (TLV)
		Upper Respiratory Tract irritation Not classifiable as a human carcinogen		

		TWA	5.000000 mg/m3	USA. NIOSH Recommended Exposure Limits
		ST	10.000000 mg/m3	USA. NIOSH Recommended Exposure Limits
		Upper Respiratory Tract irritation Exposure by all routes should be carefully controlled to levels as low as possible. Suspected human carcinogen		
		TWA	5 mg/m3	USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
		TWA	5 mg/m3	USA. ACGIH Threshold Limit Values (TLV)
		Upper Respiratory Tract irritation Not classifiable as a human carcinogen		
		TWA	5 mg/m3	USA. OSHA - TABLE Z-1 Limits for Air Contaminants - 1910.1000
		TWA	5 mg/m3	USA. NIOSH Recommended Exposure Limits
		ST	10 mg/m3	USA. NIOSH Recommended Exposure Limits
		PEL	5 mg/m3	California permissible exposure limits for chemical contaminants (Title 8, Article 107)
		As sampled by method that does not collect vapor.		
Fuel oil no. 2	68476-30-2	TWA	100.000000 mg/m3	USA. ACGIH Threshold Limit Values (TLV)
		Dermatitis Confirmed animal carcinogen with unknown relevance to humans Danger of cutaneous absorption varies		
		TWA	100.000000 mg/m3	USA. ACGIH Threshold Limit Values (TLV)
		Dermatitis Confirmed animal carcinogen with unknown relevance to humans Danger of cutaneous absorption varies		
		TWA	100 mg/m3	USA. ACGIH Threshold Limit Values (TLV)
		Dermatitis Confirmed animal carcinogen with unknown relevance to humans Danger of cutaneous absorption varies		

8.2 Exposure controls

Appropriate engineering controls

Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

Personal protective equipment

Eye/face protection

Safety glasses with side-shields conforming to EN166 Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin protection

Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Body Protection
Complete suit protecting against chemicals, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Respiratory protection
Where risk assessment shows air-purifying respirators are appropriate use a full-face particle respirator type N100 (US) or type P3 (EN 143) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Control of environmental exposure
Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

a)	Appearance	Form: solid
b)	Odour	No data available
c)	Odour Threshold	No data available
d)	pH	No data available
e)	Melting point/freezing point	No data available
f)	Initial boiling point and boiling range	No data available
g)	Flash point	No data available
h)	Evaporation rate	No data available
i)	Flammability (solid, gas)	No data available
j)	Upper/lower flammability or explosive limits	No data available
k)	Vapour pressure	No data available
l)	Vapour density	No data available
m)	Relative density	No data available
n)	Water solubility	No data available
o)	Partition coefficient: n-octanol/water	No data available
p)	Auto-ignition temperature	No data available
q)	Decomposition temperature	No data available
r)	Viscosity	No data available
s)	Explosive properties	No data available
t)	Oxidizing properties	No data available

9.2 Other safety information
No data available

10. STABILITY AND REACTIVITY

10.1 Reactivity
No data available

10.2 Chemical stability
Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions

No data available

10.4 Conditions to avoid

No data available

10.5 Incompatible materials

Strong oxidizing agents

10.6 Hazardous decomposition products

Hazardous decomposition products formed under fire conditions. - silicon oxides
Other decomposition products - No data available
In the event of fire: see section 5

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11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity
No data available

Inhalation: No data available

No data available

Skin corrosion/irritation
No data available

Serious eye damage/eye irritation
No data available

Respiratory or skin sensitisation
No data available

Germ cell mutagenicity
No data available

Carcinogenicity

IARC: 1 - Group 1: Carcinogenic to humans (Quartz)

IARC: 3 - Group 3: Not classifiable as to its carcinogenicity to humans (Baseoil - unspecified)

1 - Group 1: Carcinogenic to humans (Baseoil - unspecified)

NTP: Known to be human carcinogen (Quartz)

NTP: Known to be human carcinogenThe reference note has been added by TD based on the background information of the NTP. (Baseoil - unspecified)

OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Reproductive toxicity
No data available
No data available

Specific target organ toxicity - single exposure
No data available

Specific target organ toxicity - repeated exposure
No data available

Aspiration hazard
No data available

Additional Information
RTECS: Not available

To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

12. ECOLOGICAL INFORMATION

12.1 Toxicity
No data available

12.2 Persistence and degradability
No data available

12.3 Bioaccumulative potential
No data available

12.4 Mobility in soil
No data available

12.5 Results of PBT and vPvB assessment
PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

12.6 Other adverse effects
No data available

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Product
Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material. Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber.

Contaminated packaging
Dispose of as unused product.

14. TRANSPORT INFORMATION

DOT (US)
Not dangerous goods

IMDG
Not dangerous goods

IATA
Not dangerous goods

15. REGULATORY INFORMATION

SARA 302 Components
No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 Components
This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

SARA 311/312 Hazards
Chronic Health Hazard

Massachusetts Right To Know Components

	CAS-No.	Revision Date
Quartz	14808-60-7	1994-04-01

Pennsylvania Right To Know Components

	CAS-No.	Revision Date
Quartz	14808-60-7	1994-04-01
Baseoil - unspecified	64742-65-0	2009-07-17

New Jersey Right To Know Components

	CAS-No.	Revision Date
Quartz	14808-60-7	1994-04-01

California Prop. 65 Components

WARNING! This product contains a chemical known to the State of California to cause cancer.

	CAS-No.	Revision Date
Quartz	14808-60-7	2007-09-28
Baseoil - unspecified	64742-65-0	2013-12-20

16. OTHER INFORMATION

Full text of H-Statements referred to under sections 2 and 3.

Carc.	Carcinogenicity
H350	May cause cancer.
H351	Suspected of causing cancer.
H373	May cause damage to organs through prolonged or repeated exposure if inhaled.
STOT RE	Specific target organ toxicity - repeated exposure

HMIS Rating

Health hazard:	0
Chronic Health Hazard:	*
Flammability:	0
Physical Hazard	0

NFPA Rating

Health hazard:	0
Fire Hazard:	0
Reactivity Hazard:	0

Further information

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The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Sigma-Aldrich Corporation and its Affiliates shall not be held liable for any damage resulting from handling or from contact with the above product. See www.sigma-aldrich.com and/or the reverse side of invoice or packing slip for additional terms and conditions of sale.

Preparation Information

Sigma-Aldrich Corporation
Product Safety – Americas Region
1-800-521-8956

Version: 5.9 Revision Date: 05/28/2016 Print Date: 06/16/2016

SAFETY DATA SHEET

SDS ID NO.: 0112SPE012
Revision Date: 05/28/2015

1. IDENTIFICATION

Product Name: Speedway Fuel Oil/Diesel/Kerosene (All Grades)

Synonym: Fuel Oil/Diesel/Kerosene All Grades; MAP Fuel Oil/Diesel/Kerosene
Chemical Family: No available data

Recommended Use: Fuels.
Use Restrictions: All others.

Supplier Name and Address:
Speedway LLC
P.O. Box 1500
Enon, OH 45501

SDS information: 1-419-421-3070

Emergency Telephone: 1-877-627-5463

2. HAZARD IDENTIFICATION

Classification

OSHA Regulatory Status
This chemical is considered hazardous according to the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Flammable liquids	Category 3
Acute toxicity - Inhalation (Dusts/Mists)	Category 4
Skin corrosion/irritation	Category 2
Carcinogenicity	Category 2
Specific target organ toxicity (single exposure)	Category 3
Specific target organ toxicity (repeated exposure)	Category 2
Aspiration toxicity	Category 1
Acute aquatic toxicity	Category 2
Chronic aquatic toxicity	Category 2

Hazards Not Otherwise Classified (HNOC)
Static accumulating flammable liquid

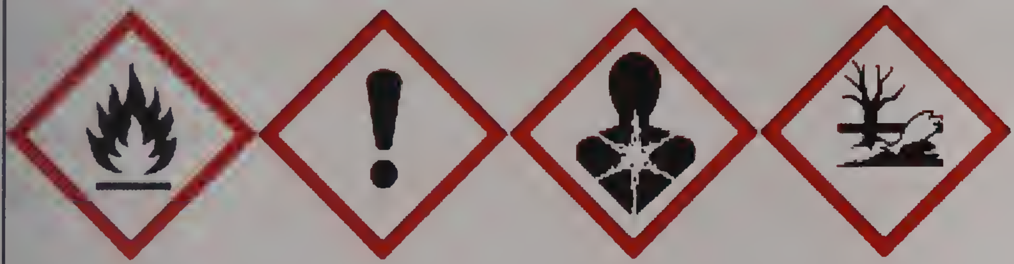
Label elements

EMERGENCY OVERVIEW

Danger

FLAMMABLE LIQUID AND VAPOR
May accumulate electrostatic charge and ignite or explode

May be fatal if swallowed and enters airways
Harmful if inhaled
Causes skin irritation
Suspected of causing cancer
May cause drowsiness or dizziness
May cause damage to organs (thymus, liver, bone marrow) through prolonged or repeated exposure
Toxic to aquatic life with long lasting effects



Appearance Colorless Liquid **Physical State** Liquid **Odor** Hydrocarbon

Precautionary Statements - Prevention
Obtain special instructions before use
Do not handle until all safety precautions have been read and understood
Keep away from heat/sparks/open flames/hot surfaces. — No smoking
Keep container tightly closed
Ground/bond container and receiving equipment
Use only non-sparking tools
Use explosion-proof electrical/ventilating/lighting/equipment
Take precautionary measures against static discharge
Do not breathe mist/vapors/spray
Use only outdoors or in a well-ventilated area
Wear protective gloves/protective clothing/eye protection/face protection
Wash hands and any possibly exposed skin thoroughly after handling
Avoid release to the environment

Precautionary Statements - Response
IF exposed or concerned: Get medical attention
IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower
If skin irritation occurs: Get medical attention
Wash contaminated clothing before reuse
IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
Call a POISON CENTER or doctor if you feel unwell
IF SWALLOWED: Immediately call a POISON CENTER or doctor
Do NOT induce vomiting
In case of fire: Use water spray, fog or regular foam for extinction
Collect spillage

Precautionary Statements - Storage
Store in a well-ventilated place. Keep container tightly closed
Keep cool
Store locked up

Precautionary Statements - Disposal
Dispose of contents/container at an approved waste disposal plant

3. COMPOSITION/INFORMATION ON INGREDIENTS

Fuel Oil/Diesel/Kerosene (All Grades) is a complex mixture of paraffins, cycloparaffins, olefins and aromatic hydrocarbons having hydrocarbon chain lengths predominantly in the range of C9 through C20. Contains minor amounts of sulfur (<0.05%). May contain a trace amount of benzene (<0.01%). May contain small amounts of red dye and additives (<0.15%) which are not considered hazardous at the concentrations used.

Composition Information:

Name	CAS Number	Weight %
Kerosine, Petroleum	8008-20-6	0-100
Fuel Oil, No. 2	68476-30-2	0-100
Naphthalene	91-20-3	0.01-0.5

4. FIRST AID MEASURES

First Aid Measures

General advice In case of accident or if you feel unwell, seek medical advice immediately (show directions for use or safety data sheet if possible).

Inhalation: Remove to fresh air. If not breathing, institute rescue breathing. If breathing is difficult, ensure airway is clear, give oxygen and continue to monitor. If heart has stopped, immediately begin cardiopulmonary resuscitation (CPR). Keep affected person warm and at rest. GET IMMEDIATE MEDICAL ATTENTION.

Skin Contact: Immediately wash exposed skin with plenty of soap and water while removing contaminated clothing and shoes. May be absorbed through the skin in harmful amounts. Get medical attention if irritation persists. Any injection injury from high pressure equipment should be evaluated immediately by a physician as potentially serious (See NOTES TO PHYSICIAN).

Place contaminated clothing in closed container until cleaned or discarded. If clothing is to be laundered, inform the person performing the operation of contaminant's hazardous properties. Destroy contaminated, non-chemical resistant footwear.

Eye Contact: Flush immediately with large amounts of water for at least 15 minutes. Eyelids should be held away from the eyeball to ensure thorough rinsing. Gently remove contacts while flushing. Get medical attention if irritation persists.

Ingestion: Do not induce vomiting because of danger of aspirating liquid into lungs, causing serious damage and chemical pneumonitis. If spontaneous vomiting occurs, keep head below hips, or if patient is lying down, turn body and head to side to prevent aspiration and monitor for breathing difficulty. Never give anything by mouth to an unconscious person. Keep affected person warm and at rest. GET IMMEDIATE MEDICAL ATTENTION.

Most important signs and symptoms, both short-term and delayed with overexposure

Adverse Effects: Acute: Headache, drowsiness, dizziness, loss of coordination, disorientation and fatigue.
Delayed: Dry skin and possible irritation with repeated or prolonged exposure.

Indication of any immediate medical attention and special treatment needed

NOTES TO PHYSICIAN: SKIN: Leaks or accidents involving high-pressure equipment may inject a stream of material through the skin and initially produce an injury that may not appear serious. Only a small puncture wound may appear on the skin surface but, without proper treatment and depending on the nature, original pressure, volume, and location of the injected material, can compromise blood supply to an affected body part. Prompt surgical debridement of the wound may be necessary to prevent irreversible loss of function and/or the affected body part. High pressure injection injuries may be SERIOUS SURGICAL EMERGENCIES.

INGESTION: This material represents a significant aspiration and chemical pneumonitis hazard. Induction of emesis is not recommended.

5. FIRE-FIGHTING MEASURES

Suitable extinguishing media
For small fires, Class B fire extinguishing media such as CO2, dry chemical, foam (AFFF/ATC) or water spray can be used. For large fires, water spray, fog or foam (AFFF/ATC) can be used. Firefighting should be attempted only by those who are adequately trained and equipped with proper protective equipment.

Unsuitable extinguishing media
Do not use straight water streams to avoid spreading fire.

Specific hazards arising from the chemical
This product has been determined to be a flammable liquid per the OSHA Hazard Communication Standard and should be handled accordingly. May accumulate electrostatic charge and ignite or explode. Vapors may travel along the ground or be moved by ventilation and ignited by many sources such as pilot lights, sparks, electric motors, static discharge, or other ignition sources at locations distant from material handling. Flashback can occur along vapor trail. For additional fire related information, see NFPA 30 or the North American Emergency Response Guide 128.

Hazardous combustion products
Smoke, carbon monoxide, and other products of incomplete combustion.

Explosion data

Sensitivity to Mechanical Impact	No.
Sensitivity to Static Discharge	Yes.

Special protective equipment and precautions for firefighters
Firefighters should wear full protective clothing and positive-pressure self-contained breathing apparatus (SCBA) with a full face-piece, as appropriate. Avoid using straight water streams. Water spray and foam (AFFF/ATC) must be applied carefully to avoid frothing and from as far a distance as possible. Avoid excessive water spray application. Keep surrounding area cool with water spray from a distance and prevent further ignition of combustible material. Keep run-off water out of sewers and water sources.

NFPA:	Health 1	Flammability 2	Instability 0	Special Hazards -

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions:	Keep public away. Isolate and evacuate area. Shut off source if safe to do so. Eliminate all ignition sources. All contaminated surfaces will be slippery.
Protective Equipment:	Use personal protection measures as recommended in Section 8.
Emergency Procedures:	Advise authorities and National Response Center (800-424-8802) if the product has entered a water course or sewer. Notify local health and pollution control agencies, if appropriate.
Environmental precautions:	Avoid release to the environment. Avoid subsoil penetration.
Methods and materials for containment:	Contain liquid with sand or soil.
Methods and materials for cleaning up:	Use suitable absorbent materials such as vermiculite, sand, or clay to clean up residual liquids. Recover and return free product to proper containers. When recovering free liquids ensure all equipment is grounded and bonded. Use only non-sparking tools.

7. HANDLING AND STORAGE

Safe Handling Precautions:

NEVER SIPHON THIS PRODUCT BY MOUTH. Use appropriate grounding and bonding practices. Static accumulating flammable liquid. Bonding and grounding may be insufficient to eliminate the hazard from static electricity. Do not expose to heat, open flames, strong oxidizers or other sources of ignition. No smoking. Avoid repeated and prolonged skin contact. Use personal protection measures as recommended in Section 8. Use only non-sparking tools. Do not cut, drill, grind or weld on empty containers since explosive residues may remain. Refer to applicable EPA, OSHA, NFPA and consistent state and local requirements.

Hydrocarbons are basically non-conductors of electricity and can become electrostatically charged during mixing, filtering, pumping at high flow rates or loading and transfer operations. If this charge reaches a sufficiently high level, sparks can form that may ignite the vapors of flammable liquids. Sudden release of hot organic chemical vapors or mists from process equipment operating under elevated temperature and pressure, or sudden ingress of air into vacuum equipment may result in ignition of vapors or mists without the presence of obvious ignition sources. Nozzle spouts must be kept in contact with the containers or tank during the entire filling operation.

Portable containers should never be filled while in or on a motor vehicle or marine craft. Containers should be placed on the ground. Static electric discharge can ignite fuel vapors when filling non-grounded containers or vehicles on trailers. The nozzle spout must be kept in contact with the container before and during the entire filling operation. Use only approved containers.

A buildup of static electricity can occur upon re-entry into a vehicle during fueling especially in cold or dry climate conditions. The charge is generated by the action of dissimilar fabrics (i.e., clothing and upholstery) rubbing across each other as a person enters/exits the vehicle. A flash fire can result from this discharge if sufficient flammable vapors are present. Therefore, do not get back in your vehicle while refueling.

Cellular phones and other electronic devices may have the potential to emit electrical charges (sparks). Sparks in potentially explosive atmospheres (including fueling areas such as gas stations) could cause an explosion if sufficient flammable vapors are present. Therefore, turn off cellular phones and other electronic devices when working in potentially explosive atmospheres or keep devices inside your vehicle during refueling.

High-pressure injection of any material through the skin is a serious medical emergency even though the small entrance wound at the injection site may not initially appear serious. These injection injuries can occur from high-pressure equipment such as paint spray or grease or guns, fuel injectors, or pinhole leaks in hoses or hydraulic lines and should all be considered serious. High pressure injection injuries may be SERIOUS SURGICAL EMERGENCIES (See First Aid Section 4).

Storage Conditions:

Store in properly closed containers that are appropriately labeled and in a cool, well-ventilated area.

Incompatible materials

Strong oxidizing agents.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Name	ACGIH TLV	OSHA PELS:	OSHA - Vacated PELs	NIOSH IDLH
Kerosine, Petroleum 8008-20-6	200 mg/m³ TWA Skin - potential significant contribution to overall exposure by the cutaneous route	-	-	-
Fuel Oil, No. 2 68476-30-2	100 mg/m³ TWA Skin - potential significant contribution to overall exposure by the cutaneous route	-	-	-

Naphthalene 91-20-3	10 ppm TWA Skin - potential significant contribution to overall exposure by the cutaneous route	TWA: 10 ppm TWA: 50 mg/m^3	10 ppm TWA 50 mg/m^3 TWA 15 ppm STEL 75 mg/m^3 STEL	250 ppm

Notes:	The manufacturer has voluntarily elected to provide exposure limits contained in OSHA's 1989 air contaminants standard in its SDSs, even though certain of those exposure limits were vacated in 1992.
Engineering measures:	Local or general exhaust required in an enclosed area or with inadequate ventilation. Use mechanical ventilation equipment that is explosion-proof.

Personal protective equipment

Eye protection:	Use goggles or face-shield if the potential for splashing exists.
Skin and body protection:	Wear neoprene, nitrile or PVA gloves to prevent skin contact. Glove suitability is based on workplace conditions and usage. Contact the glove manufacturer for specific advice on glove selection and breakthrough times.
Respiratory protection:	Use an approved organic vapor chemical cartridge or supplied air respirators when material produces vapors that exceed permissible exposure limits or excessive vapors are generated. Observe respirator assigned protection factors (APFs) criteria cited in federal OSHA 29 CFR 1910.134. Self-contained breathing apparatus should be used for fire fighting.
Hygiene measures:	Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin, eyes and clothing.

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Physical State	Liquid
Appearance	Colorless Liquid
Color	Colorless
Odor	Hydrocarbon
Odor Threshold	No available data.

Property	**Values (Method)**
Melting Point / Freezing Point	No available data.
Initial Boiling Point / Boiling Range	182-338 °C / 360-640 °F
Flash Point	49-88 °C / 120-190 °F
Evaporation Rate	No available data.
Flammability (solid, gas)	Not applicable.
Flammability Limit in Air (%)	
Upper Flammability Limit:	5.0
Lower Flammability Limit:	0.7
Vapor Pressure	1-10 mm Hg @ 20°C
Vapor Density	4-5
Specific Gravity / Relative Density	0.8
Water Solubility	No available data.
Solubility in other solvents	Negligible
Partition Coefficient	No available data.
Decomposition temperature:	No available data.
pH:	Not applicable
Autoignition Temperature	254-336 °C / 489-637 °F
Kinematic Viscosity	No available data. @ 50°C
Dynamic Viscosity	No available data.
Explosive Properties	No available data.
Softening Point	No available data.
VOC Content (%)	10%

Density	6.76 lbs/gal
Bulk Density	Not applicable.

10. STABILITY AND REACTIVITY

Reactivity	The product is non-reactive under normal conditions.
Chemical stability	The material is stable at 70°F, 760 mmHg pressure.
Possibility of hazardous reactions	None under normal processing.
Hazardous polymerization	Will not occur.
Conditions to avoid	Excessive heat, sources of ignition, open flame.
Incompatible materials	Strong oxidizing agents.
Hazardous decomposition products	None known under normal conditions of use.

11. TOXICOLOGICAL INFORMATION

Potential short-term adverse effects from overexposures

Inhalation	Harmful if inhaled. Inhalation of high vapor concentrations may cause irritation of the respiratory system. May cause drowsiness or dizziness.
Eye contact	Causes mild eye irritation.
Skin contact	Irritating to skin. Effects may become more serious with repeated or prolonged contact. May be absorbed through the skin in harmful amounts.
Ingestion	May be fatal if swallowed or vomited and enters airways. May cause irritation of the mouth, throat and gastrointestinal tract.

Acute Toxicological data

Name	Oral LD50	Dermal LD50	Inhalation LC50
Kerosine, Petroleum 8008-20-6	> 5000 mg/kg (Rat)	> 2000 mg/kg (Rabbit)	> 5.28 mg/L (Rat) 4 h
Fuel Oil, No. 2 68476-30-2	12 g/kg (rat)	4720 µL/kg (Rabbit)	4.6 mg/L (Rat) 4 h
Naphthalene 91-20-3	490 mg/kg (Rat)	> 2000 mg/kg (Rabbit)	> 340 mg/m^3 (Rat) 1 h

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Altered mental state, drowsiness, peripheral motor neuropathy, irreversible brain damage (so-called Petrol Sniffer's Encephalopathy), delirium, seizures, and sudden death have been reported from repeated overexposure to some hydrocarbon solvents, naphthas, and gasoline.

MIDDLE DISTILLATES, PETROLEUM: Long-term repeated (lifetime) skin exposure to similar materials has been reported to result in an increase in skin tumors in laboratory rodents. The relevance of these findings to humans is not clear at this time.

MIDDLE DISTILLATES WITH CRACKED STOCKS: Light cracked distillates have been shown to be carcinogenic in animal tests and have tested positive with in vitro genotoxicity tests. Repeated dermal exposures to high concentrations in test animals resulted in reduced litter size and litter weight, and increased fetal resorptions at maternally toxic doses. Dermal exposure to high concentrations resulted in severe skin irritation with weight loss and some mortality. Inhalation exposure to high concentrations resulted in respiratory tract irritation, lung changes/infiltration/accumulation, and reduction in lung function.

ISOPARAFFINS: Studies in laboratory animals have shown that long-term exposure to similar materials (isoparaffins) can cause kidney damage and kidney cancer in male laboratory rats. However, in-depth research indicates that these findings are unique to the male rat, and that these effects are not relevant to humans.

NAPHTHALENE: Severe jaundice, neurotoxicity (kernicterus) and fatalities have been reported in young children and infants as a result of hemolytic anemia from overexposure to naphthalene. Persons with glucose 6-phosphate dehydrogenase (G6PD) deficiency are more prone to the hemolytic effects of naphthalene. Adverse effects on the kidney have been reported in persons overexposed to naphthalene but these effects are believed to be a consequence of hemolytic anemia, and not a direct effect. Hemolytic anemia has been observed in laboratory animals exposed to naphthalene. Laboratory rodents exposed to naphthalene vapor for 2 years (lifetime studies) developed non-neoplastic and neoplastic tumors and inflammatory lesions of the nasal and respiratory tract. Cataracts and other adverse effects on the eye have been observed in laboratory animals exposed to high levels of naphthalene. Findings from a large number of bacterial and mammalian cell mutation assays have been negative. A few studies have shown chromosomal effects (elevated levels of Sister Chromatid Exchange or chromosomal aberrations) in vitro. Naphthalene has been classified as Possibly Carcinogenic to Humans (2B) by IARC, based on findings from studies in laboratory animals.

DIESEL EXHAUST: Chronic inhalation studies of whole diesel engine exhaust in mice and rats produced a significant increase in lung tumors. Combustion of kerosine and/or diesel fuels produces gases and particulates which include carbon monoxide, carbon dioxide, oxides of nitrogen and/or sulfur and hydrocarbons. Significant exposure to carbon monoxide vapors decreases the oxygen carrying capacity of the blood and may cause tissue hypoxia via formation of carboxyhemoglobin.

Adverse effects related to the physical, chemical and toxicological characteristics

Signs & Symptoms Nausea, vomiting, signs of nervous system depression: headache, drowsiness, dizziness, loss of coordination, disorientation and fatigue.

Sensitization Not expected to be a skin or respiratory sensitizer.

Mutagenic effects None known.

Carcinogenicity Cancer designations are listed in the table below.

Name	ACGIH (Class)	IARC (Class)	NTP	OSHA
Kerosine, Petroleum 8008-20-6	Confirmed animal carcinogen (A3)	Not Classifiable (3)	Not Listed	Not Listed
Fuel Oil, No. 2 68476-30-2	Confirmed animal carcinogen (A3)	Not Classifiable (3)	Not Listed	Not Listed

Naphthalene 91-20-3	Confirmed animal carcinogen (A3)	Possible human carcinogen (2B)	Reasonably anticipated to be a human carcinogen	Not Listed

Reproductive toxicity	None known.
Specific Target Organ Toxicity (STOT) - single exposure	Central nervous system.
Specific Target Organ Toxicity (STOT) - repeated exposure	Thymus. Liver. Bone marrow.
Aspiration hazard	May be fatal if swallowed or vomited and enters airways.

12. ECOLOGICAL INFORMATION

Ecotoxicity This product should be considered toxic to aquatic organisms, with the potential to cause long lasting adverse effects in the aquatic environment.

Name	Algae/aquatic plants	Fish	Toxicity to Microorganisms	Crustacea
Kerosine, Petroleum 8008-20-6	72-hr EL50 = 5.0-11 mg/l Algae	96-hr LL50 = 18-25 mg/l Fish	-	48-hr EL50 = 1.4-21 mg/l Invertebrates
Fuel Oil, No. 2 68476-30-2	-	96-hr LC50 = 35 mg/l Fathead minnow (flow-through)	-	48-hr TLm = 4.1 ppm Grass shrimp
Naphthalene 91-20-3	-	96-hr LC50 = 0.91-2.82 mg/l Rainbow trout (static) 96-hr LC50 = 1.99 mg/l Fathead minnow (static)	-	48-hr LC50 = 1.6 mg/l Daphnia magna

Persistence and degradability	Expected to be inherently biodegradable.
Bioaccummulation	Has the potential to bioaccumulate.
Mobility in soil	May partition into air, soil and water.
Other adverse effects	No information available.

13. DISPOSAL CONSIDERATIONS

Description of Waste Residues
This material may be a flammable liquid waste.

Safe Handling of Wastes
Handle in accordance with applicable local, state, and federal regulations. Use personal protection measures as required. Use appropriate grounding and bonding practices. Use only non-sparking tools. Do not expose to heat, open flames, strong oxidizers or other sources of ignition. No smoking.

Disposal of Wastes / Methods of Disposal
The user is responsible for determining if any discarded material is a hazardous waste (40 CFR 262.11). Dispose of in accordance with federal, state and local regulations.

Methods of Contaminated Packaging Disposal
Empty containers should be completely drained and then discarded or recycled, if possible. Do not cut, drill, grind or weld on empty containers since explosive residues may be present. Dispose of in accordance with federal, state and local regulations.

14. TRANSPORT INFORMATION

DOT (49 CFR 172.101):

UN Proper shipping name:	Fuel Oil, No. 2

UN/Identification No:	NA 1993
Transport Hazard Class(es):	3
Packing group:	III

TDG (Canada):

UN Proper shipping name:	Fuel Oil, No. 2
UN/Identification No:	NA 1993
Transport Hazard Class(es):	3
Packing group:	III

15. REGULATORY INFORMATION

US Federal Regulatory Information:

US TSCA Chemical Inventory Section 8(b): This product and/or its components are listed on the TSCA Chemical Inventory.

EPA Superfund Amendment & Reauthorization Act (SARA):

SARA Section 302: This product does not contain any component(s) included on EPA's Extremely Hazardous Substance (EHS) List.

Name	CERCLA/SARA - Section 302 Extremely Hazardous Substances and TPQs
Kerosine, Petroleum	NA
Fuel Oil, No. 2	NA
Naphthalene	NA

SARA Section 304: This product may contain component(s) identified either as an EHS or a CERCLA Hazardous substance which in case of a spill or release may be subject to SARA reporting requirements:

Name	CERCLA/SARA - Hazardous Substances and their Reportable Quantities
Kerosine, Petroleum	NA
Fuel Oil, No. 2	NA
Naphthalene	100 lb final RQ 45.4 kg final RQ

SARA: The following EPA hazard categories apply to this product:

Acute Health Hazard
Fire Hazard
Chronic Health Hazard

SARA Section 313: This product may contain component(s), which if in exceedance of the de minimus threshold, may be subject to the reporting requirements of SARA Title III Section 313 Toxic Release Reporting (Form R).

Name	CERCLA/SARA 313 Emission reporting:
Kerosine, Petroleum	None
Fuel Oil, No. 2	None
Naphthalene	0.1 % de minimis concentration

State and Community Right-To-Know Regulations:
The following component(s) of this material are identified on the regulatory lists below:

Kerosine, Petroleum

Louisiana Right-To-Know:	Not Listed.
California Proposition 65:	Not Listed.
New Jersey Right-To-Know:	SN 1091
Pennsylvania Right-To-Know:	Present

Massachusetts Right-To Know:	Present
Florida Substance List:	Not Listed.
Rhode Island Right-To-Know:	Not Listed.
Michigan Critical Materials Register List:	Not Listed.
Massachusetts Extraordinarily Hazardous Substances:	Not Listed.
California - Regulated Carcinogens:	Not Listed.
Pennsylvania RTK - Special Hazardous Substances:	Not Listed.
New Jersey - Special Hazardous Substances:	Not Listed.
New Jersey - Environmental Hazardous Substances List:	SN 1091 TPQ: 10000 lb (Under N.J.A.C. 7:1G, environmental hazardous substances in mixtures such as gasoline or new and used petroleum oil may be reported under these categories)
Illinois - Toxic Air Contaminants	Not Listed.
New York - Reporting of Releases Part 597 - List of Hazardous Substances:	Not Listed.

Fuel Oil, No. 2

Louisiana Right-To-Know:	Not Listed.
California Proposition 65:	Not Listed.
New Jersey Right-To-Know:	SN 2444
Pennsylvania Right-To-Know:	Present
Massachusetts Right-To Know:	Not Listed.
Florida Substance List:	Not Listed.
Rhode Island Right-To-Know:	Not Listed.
Michigan Critical Materials Register List:	Not Listed.
Massachusetts Extraordinarily Hazardous Substances:	Not Listed.
California - Regulated Carcinogens:	Not Listed.
Pennsylvania RTK - Special Hazardous Substances:	Not Listed.
New Jersey - Special Hazardous Substances:	Not Listed.
New Jersey - Environmental Hazardous Substances List:	SN 2444 TPQ: 10000 lb (Under N.J.A.C. 7:1G, environmental hazardous substances in mixtures such as gasoline or new and used petroleum oil may be reported under these categories)
Illinois - Toxic Air Contaminants	Not Listed.
New York - Reporting of Releases Part 597 - List of Hazardous Substances:	Not Listed.

Naphthalene

Louisiana Right-To-Know:	Not Listed.
California Proposition 65:	Carcinogen, initial date 4/19/02
New Jersey Right-To-Know:	SN 1322 SN 3758
Pennsylvania Right-To-Know:	Environmental hazard Present (particulate)
Massachusetts Right-To Know:	Present
Florida Substance List:	Not Listed.
Rhode Island Right-To-Know:	Toxic; Flammable
Michigan Critical Materials Register List:	Not Listed.
Massachusetts Extraordinarily Hazardous Substances:	Not Listed.
California - Regulated Carcinogens:	Not Listed.
Pennsylvania RTK - Special Hazardous Substances:	Not Listed.
New Jersey - Special Hazardous Substances:	Carcinogen
New Jersey - Environmental Hazardous Substances List:	SN 1322 TPQ: 500 lb (Reportable at the de minimis quantity of >0.1%)
Illinois - Toxic Air Contaminants	Present
New York - Reporting of Releases Part 597 - List of Hazardous Substances:	100 lb RQ (air); 1 lb RQ (land/water)

Canada DSL/NDSL Inventory: This product contains the following component(s) that are listed on the Non-Domestic Substance List (NDSL): CAS# 1159170-26-9

Canadian Regulatory Information: "This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the (M)SDS contains all the information required by the Controlled Products Regulations."

Name	Canada - WHMIS: Classifications of Substances:	Canada - WHMIS: Ingredient Disclosure:
Kerosine, Petroleum	B3,D2B	1%
Fuel Oil, No. 2	B3,D2A,D2B	0.1%
Naphthalene	B4,D2A	0.1%

NOTE: Not Applicable.

16. OTHER INFORMATION

Prepared By Toxicology and Product Safety
Revision Date: 05/28/2015

Revision Note:

Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information is intended as guidance for safe handling, use, processing, storage, transportation, accidental release, clean-up and disposal and is not considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

SAFETY DATA SHEET

Santa Cruz Biotechnology, Inc.
Revision date 21-Apr-2015
Version 1.1

1. PRODUCT AND COMPANY IDENTIFICATION

Product Name	Arsenic(III) oxide
Product Code	SC-210837
Recommended use	For research use only. Not intended for diagnostic or therapeutic use.

Company
Santa Cruz Biotechnology, Inc.
10410 Finnell Street
Dallas, TX 75220
831.457.3800
800.457.3801
scbt@scbt.com

Emergency telephone number
Chemtrec
1.800.424.9300 (Within USA)
+1.703.527.3887 (Outside USA)

2. HAZARDS IDENTIFICATION

Signal word	Danger
Emergency Overview	Contains a known or suspected carcinogen Corrosive The product causes burns of eyes, skin and mucous membranes Harmful by inhalation, in contact with skin and if swallowed May cause adverse kidney effects
OSHA Regulatory Status	This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200)

Potential health effects

Eyes	Causes burns. Corrosive to the eyes and may cause severe damage including blindness. Risk of serious damage to eyes.
Skin	Causes burns.
Inhalation	Harmful by inhalation. May be harmful if inhaled.
Ingestion	Ingestion causes burns of the upper digestive and respiratory tracts. Can burn mouth, throat, and stomach. HARMFUL IF SWALLOWED.
Chronic Toxicity	Chronic exposure to corrosive fumes/gases may cause erosion of the teeth followed by jaw necrosis. Bronchial irritation with chronic cough and frequent attacks of pneumonia are common. Gastrointestinal disturbances may also be seen. Avoid repeated exposure. Possible risk of irreversible effects. May cause adverse liver effects.
Aggravated Medical Conditions	Kidney disorders. Liver disorders. Skin disorders. Respiratory disorders. Lymphatic System. Lungs.

Hazards not otherwise classified (HNOC)

Hazards not otherwise classified (HNOC)	Not applicable

Environmental Hazard	Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment. See Section 12: ECOLOGICAL INFORMATION.

NFPA		
	Health hazards	3
	Flammability	0
	Stability	0
	Physical and chemical properties	-

HMIS		
	Health hazards	3
	Flammability	0
	Physical hazards	0
	Personal protection	-

3. COMPOSITION/INFORMATION ON INGREDIENTS

Product Name	Arsenic(III) oxide
Molecular Weight	197.84
Formula	As_2O_3

4. FIRST AID MEASURES

General advice	Immediate medical attention is required.
Eye contact	Keep eye wide open while rinsing. Immediate medical attention is required. Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Do not rub affected area.
Skin Contact	Immediate medical attention is required. Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes.
Inhalation	Remove to fresh air. Call a physician or poison control center immediately. If not breathing, give artificial respiration. If breathing is difficult, give oxygen.
Ingestion	Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Drink plenty of water. Immediate medical attention is required. Remove from exposure, lie down. Clean mouth with water and drink afterwards plenty of water. Call a physician or poison control center immediately.
Note to physicians	Product is a corrosive material. Use of gastric lavage or emesis is contraindicated. Possible perforation of stomach or esophagus should be investigated. Do not give chemical antidotes. Asphyxia from glottal edema may occur. Marked decrease in blood pressure may occur with moist rales, frothy sputum, and high pulse pressure. Treat symptomatically.
Self-protection of the first aider	Use personal protective equipment as required. Avoid contact with skin, eyes or clothing.

5. FIRE-FIGHTING MEASURES

Suitable Extinguishing Media

Suitable Extinguishing Media	Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Specific hazards arising from the chemical

Specific hazards arising from the chemical	The product causes burns of eyes, skin and mucous membranes. Thermal decomposition can lead to release of irritating and toxic gases and vapors. In the event of fire and/or explosion do not breathe fumes.
Flammable properties	Not determined.
Flash point °C	No information available

Explosion data

Sensitivity to Mechanical Impact	No information available.
Sensitivity to Static Discharge	No information available.

Protective equipment and precautions for firefighters

Protective equipment and precautions for firefighters	Wear self-contained breathing apparatus and protective suit.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions	Use personal protective equipment as required. Evacuate personnel to safe areas. Avoid contact with skin, eyes or clothing. Keep people away from and upwind of spill/leak.
Environmental precautions	Do not allow into any sewer, on the ground or into any body of water. Should not be released into the environment. Prevent further leakage or spillage if safe to do so. Prevent product from entering drains. See Section 12 for additional Ecological Information.
Methods for containment	Prevent further leakage or spillage if safe to do so. Cover powder spill with plastic sheet or tarp to minimize spreading. Dike far ahead of liquid spill for later disposal.
Methods for cleaning up	Take up mechanically, placing in appropriate containers for disposal. Clean contaminated surface thoroughly. Use personal protective equipment as required. Cover powder spill with plastic sheet or tarp to minimize spreading and keep powder dry. Avoid creating dust. Dam up. After cleaning, flush away traces with water.

7. HANDLING AND STORAGE

Advice on safe handling	Use personal protective equipment as required. Avoid contact with skin, eyes or clothing. Ensure adequate ventilation, especially in confined areas. In case of insufficient ventilation, wear suitable respiratory equipment. Use only with adequate ventilation and in closed systems. May cause damage to organs through prolonged or repeated exposure.
Storage Conditions	Keep container tightly closed in a dry and well-ventilated place. Keep out of the reach of children. Keep containers tightly closed in a dry, cool and well-ventilated place. Keep in properly labeled containers.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure Guidelines

Chemical Name	ACGIH TLV	OSHA PEL	NIOSH IDLH
Arsenic(III) oxide 1327-53-3	TWA: 0.01 mg/m³ As	TWA: 10 µg/m³ As	IDLH: 5 mg/m³ As Ceiling: 0.002 mg/m³ As 15 min

NIOSH IDLH Immediately Dangerous to Life or Health

Other Information	Vacated limits revoked by the Court of Appeals decision in AFL-CIO v. OSHA, 965 F.2d 962 (11th Cir., 1992)

Exposure controls

Engineering Controls	Showers Eyewash stations Ventilation systems

Personal protective equipment (PPE)

Eye/face protection	Tight sealing safety goggles. Face protection shield.
Skin and Body Protection	Gloves made of plastic or rubber. Suitable protective clothing. Rubber boots. Wear impervious protective clothing, including boots, gloves, lab coat, apron or coveralls, as appropriate, to prevent skin contact. Wear chemical resistant clothing such as gloves, apron, boots or whole bodysuits made from neoprene, as appropriate.
Respiratory protection	Ensure adequate ventilation, especially in confined areas.
General Hygiene Considerations	When using do not eat, drink or smoke. Wash contaminated clothing before reuse. Keep away from food, drink and animal feeding stuffs. Contaminated work clothing should not be allowed out of the workplace. Regular cleaning of equipment, work area and clothing is recommended. Avoid contact with skin, eyes or clothing. Take off all contaminated clothing and wash it before reuse. Wear suitable gloves and eye/face protection.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State	Solid
Appearance	powder
Odor	No information available

Property	**Values**
pH	No information available
Melting point/freezing point	313 °C
Boiling point	460 °C
Flash point	No information available
Density	3.74 g/cm^3
Evaporation rate	No information available
Upper flammability limits	No information available
Lower flammability limit	No information available
Vapor pressure	.000001
Vapor density	No information available
Specific gravity	No information available
Water solubility	No information available
Solubility in other solvents	No information available
Partition coefficient	No information available
Autoignition temperature	No information available
Decomposition temperature	No information available
Kinematic viscosity	No information available
Explosive properties	No information available
Oxidizing properties	No information available

10. STABILITY AND REACTIVITY

Reactivity	Not applicable
Stability	Stable under recommended storage conditions.
Incompatible materials	Incompatible with strong acids and bases. Incompatible with oxidizing agents.
Conditions to avoid	Exposure to air or moisture over prolonged periods.
Hazardous Decomposition Products	Thermal decomposition can lead to release of irritating and toxic gases and vapors.
Hazardous polymerization	Hazardous polymerization does not occur

11. TOXICOLOGICAL INFORMATION

Acute toxicity

Product Information	Product does not present an acute toxicity hazard based on known or supplied information.

Chronic Toxicity

Chronic Toxicity	Chronic exposure to corrosive fumes/gases may cause erosion of the teeth followed by jaw necrosis. Bronchial irritation with chronic cough and frequent attacks of pneumonia are common. Gastrointestinal disturbances may also be seen. Avoid repeated exposure. Possible risk of irreversible effects. May cause adverse liver effects.
Carcinogenicity	The table below indicates whether each agency has listed any ingredient as a carcinogen.
Target Organ Effects	Kidney. Liver. Lymphatic System. Lungs. Skin.

ACGIH (American Conference of Governmental Industrial Hygienists) A1 - Known Human Carcinogen
IARC (International Agency for Research on Cancer) Group 1 - Carcinogenic to Humans
NTP (National Toxicology Program) Known - Known Carcinogen
OSHA (Occupational Safety and Health Administration of the US Department of Labor) X - Present

12. ECOLOGICAL INFORMATION

Ecotoxicity

Ecotoxicity	Harmful to aquatic life. Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
Persistence and degradability	No information available.

Bioaccumulation	No information available.

Chemical Name	Algae/aquatic plants	Fish	Crustacea
Arsenic(III) oxide	-	135: 96 h Pimephales promelas mg/L LC50 1000: 96 h Oncorhynchus mykiss mg/L LC50 static 18.8 - 21.4: 96 h Oncorhynchus mykiss mg/L LC50 flow-through	0.96: 96 h Daphnia magna mg/L LC50 3.9 - 4.5: 24 h Daphnia magna mg/L EC50

13. DISPOSAL CONSIDERATIONS

Disposal considerations	Disposal should be in accordance with applicable regional, national and local laws and regulations. Should not be released into the environment.
Contaminated packaging	Do not reuse container.
US EPA Waste Number	P012

Chemical Name	RCRA	RCRA - Basis for Listing	RCRA - D Series Wastes	RCRA - U Series Wastes
Arsenic(III) oxide - 1327-53-3	P012			

14. TRANSPORT INFORMATION

DOT

UN/ID no	UN1561
Hazard Class	6.1
Packing Group	II
Proper shipping name	Arsenic trioxide
Description	UN1561, Arsenic trioxide, 6.1, II, POISON
Emergency Response Guide Number	151

IATA

UN/ID no	UN1561
Hazard Class	6.1
Packing Group	II
Proper shipping name	Arsenic trioxide
Description	UN1561, Arsenic trioxide, 6.1, II

IMDG

UN/ID no	UN1561
Hazard Class	6.1
Packing Group	II
Proper shipping name	Arsenic trioxide
Description	UN1561, Arsenic trioxide, 6.1, II
EmS-No	F-A, S-A

15. REGULATORY INFORMATION

International Inventories

All of the components in the product are on the following Inventory lists TSCA (United States): Canada (DSL/NDSL) Europe (EINECS/ELINCS/NLP) Australia (AICS) South Korea (KECL): China (IECSC) ENCS (Japan): Philippines (PICCS)

X - Listed
TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List
EINECS/ELINCS - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances
ENCS - Japan Existing and New Chemical Substances

IECSC - China Inventory of Existing Chemical Substances
KECL - Korean Existing and Evaluated Chemical Substances
PICCS - Philippines Inventory of Chemicals and Chemical Substances

US Federal Regulations

SARA 313

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product does not contain any chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372.

SARA 311/312 Hazard Categories

Acute health hazard	Yes
Chronic Health Hazard	Yes
Fire hazard	No
Sudden release of pressure hazard	No
Reactive hazard	No

CWA (Clean Water Act)

This product contains the following substances which are regulated pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42).

US State Regulations

California Proposition 65

This product contains the following Proposition 65 chemicals.

Chemical Name	California Proposition 65
Arsenic(III) oxide - 1327-53-3	Carcinogen Developmental

U.S. State Right-to-Know Regulations

Chemical Name	New Jersey	Massachusetts	Pennsylvania
Arsenic(III) oxide 1327-53-3	X	X	X

Mexico Regulatory Information

Canada Regulatory Information

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all the information required by the CPR

WHMIS Hazard Class	D2A - Very toxic materials Non-controlled

16. OTHER INFORMATION

Revision date	21-Apr-2015
Revision note	No information available

Disclaimer

The information provided in this Material Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

End of Safety Data Sheet

Barium

Print

SAFETY DATA SHEET

1 PRODUCT AND SUPPLIER IDENTIFICATION

Product Name: Barium Solid

Formula: Ba

Supplier: ESPI Metals
1050 Benson Way
Ashland, OR 97520

Telephone: 800-638-2581

Fax: 541-488-8313

Email: sales@espimetals.com

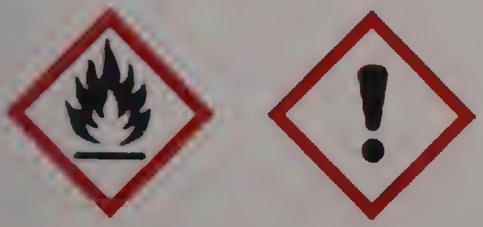
Emergency: Infotrac 800-535-5053 (US) or 352-323-3500 (24 hour)

Recommended Uses: Scientific Research

2 HAZARDS IDENTIFICATION

GHS Classification (29 CFR 1910.1200): Substances and mixtures which, in contact with water, emit flammable gases, category 2, Skin corrosion/irritation, category 2, Eye damage/irritation, category 2A.

GHS Label Elements:



Signal Word: Danger

Hazard Statements: H261 In contact with water releases flammable gas, H315 Causes skin irritation, H319

Causes serious eye irritation, H335 May cause respiratory irritation.

Precautionary Statements: P223 Keep away from any possible contact with water, because of violent reaction and possible flash fire, P231+P232 Handle under inert gas. Protect from moisture, P261 Avoid breathing dust or fume, P264 Wash skin thoroughly after handling, P280 Wear protective gloves/protective clothing/eye protection/face protection, P302+P352 IF ON SKIN: wash with plenty of soap and water, P332+P313 IF SKIN irritation occurs: Get medical advice/attention, P305+P351+P338 IF IN EYES: rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing, P337+P313 IF eye irritation persists: Get medical advice/attention, P362 Take off contaminated clothing and wash before reuse, P370+P378 In case of fire: Use Class D dry powder for extinction, P402+P404 Store in a dry place. Store in a closed container, P501 Dispose of contents/container in accordance with local, state or federal regulations.

3 COMPOSITION/INFORMATION ON INGREDIENTS

Ingredient: Barium

CAS#: 7440-39-3

%: 100

EC#: 231-149-1

4 FIRST AID MEASURES

General Measures: Remove patient from area of exposure.

INHALATION: Remove to fresh air, keep warm and quiet, give oxygen if breathing is difficult. Seek immediate medical attention.

INGESTION: Quickly wipe material from mouth and rinse with water. Do not induce vomiting. Seek medical attention immediately.

SKIN: Remove contaminated clothing if necessary. Brush off any visible solids. Wash the affected area with water for at least 15 minutes. Seek medical attention.

EYES: Immediately flush eyes with copious amounts of water, including under eyelids for at least 10-15 minutes. A victim may need assistance in keeping their eyelids open. Seek immediate medical attention.

Most Important Symptoms/Effects, Acute and Delayed: May cause severe irritation in contact with mucous membranes and moist skin. See section 11 for more information.

Indication of Immediate Medical Attention and Special Treatment: No other relevant information available.

5 FIREFIGHTING MEASURES

Extinguishing Media: Use Class D dry powder extinguishing agent.

Unsuitable Extinguishing Media: Do not use water, carbon dioxide or halogenated extinguishers.

Specific Hazards Arising from the Material: Material readily reacts with water generating flammable hydrogen gas. May emit fumes of barium oxide under fire conditions.

Special Protective Equipment and Precautions for Firefighters: Full face, self-contained breathing apparatus and full protective clothing to prevent contact with skin and eyes. Barium metal can reignite after fire is initially extinguished. Never leave extinguished fire unattended.

6 ACCIDENTAL RELEASE MEASURES

Personal Precautions, Protective Equipment, and Emergency Procedures: Wear appropriate respiratory and protective equipment specified in section 8. Isolate spill area and provide ventilation. Avoid breathing dust or fume. Avoid contact with skin and eyes. Eliminate all sources of ignition.

Methods and Materials for Containment and Cleaning Up: Sweep or scoop spilled product and place in a closed container for further handling and disposal. Do not use water for spill clean-up. Cover very small quantities in the open with powdered limestone and let decompose. Use only non-sparking tools and natural bristle brushes.

Environmental Precautions: Do not flush to sewer, stream, or other bodies of water. Do not allow to enter drains or to be released to the environment.

7 HANDLING AND STORAGE

Precautions for Safe Handling: Handle in an enclosed, controlled process under dry protective gas such as argon. Use non-sparking tools. Protect from sources of ignition. Do not allow contact with water. Avoid breathing dust or fumes. Provide adequate ventilation if dusts are created. Avoid contact with skin and eyes. Wash thoroughly before eating or smoking. See section 8 for information on personal protection equipment.

Conditions for Safe Storage, Including Any Incompatibilities: Store material tightly sealed in properly labeled containers under argon or mineral oil. Storage area should be free of combustibles and ignition sources. Do not store together with acids, oxidizers, halogens. Protect from water/moisture. See section 10 for more information on incompatible materials.

8 EXPOSURE CONTROLS AND PERSONAL PROTECTION

Exposure Limits:	Barium
OSHA/PEL:	0.5 mg/m^3
ACGIH/TLV:	0.5 mg/m^3

Appropriate Engineering Controls: Handle in an enclosed, controlled process under dry argon. Whenever possible the use of local exhaust ventilation or other engineering controls is the preferred method of controlling exposure to airborne dust and fume to meet established occupational exposure limits. Do not use tobacco or food in work area. Wash thoroughly before eating or smoking. Do not blow dust off clothing or skin with compressed air. Prepare for the possibility of a fire. Keep extinguishing agents, tools for handling and protective clothing readily available.

Individual Protection Measures, Such as Personal Protective Equipment:

Respiratory Protection: Wear a NIOSH/MSHA approved respirator when high concentrations are present.

Eye Protection: Always wear approved chemical splash proof goggles.

Skin Protection: Rubber gloves, flame retardant protective work clothing.

9 PHYSICAL AND CHEMICAL PROPERTIES

Appearance:

Form: Solid in various forms

Color: Silver-gray metallic

Odor: Not determined

Odor Threshold: Not determined

pH: N/A

Melting Point: 725 °C

Boiling Point: 1640 °C

Flash Point: N/A

Evaporation Rate: N/A

Flammability: Flammable solid

Upper Flammable Limit: No data

Lower Flammable Limit: No data

Vapor Pressure: 10 mm at 1049 °C

Vapor Density: N/A

Relative Density (Specific Gravity): 3.51 g/cc at 20 °C

Solubility in H_2O: Decomposes

Partition Coefficient (n-octanol/water): Not determined

Autoignition Temperature: No data

Decomposition Temperature: No data

Viscosity: N/A

10 STABILITY AND REACTIVITY

Reactivity: No data

Chemical Stability: Stable under recommended storage conditions.

Possibility of Hazardous Reactions: Barium reacts readily with water releasing flammable hydrogen gas.

Conditions to Avoid: Heat, sparks, flame. Exposure to water or moist air.

Incompatible Materials: Water or moisture, oxidizing agents, oxygen, acids, alcohols, halocarbons, carbon dioxide, ammonia.

Hazardous Decomposition Products: Barium oxides, hydrogen gas.

11 TOXICOLOGICAL INFORMATION

Likely Routes of Exposure: Inhalation, skin, eyes.

Symptoms of Exposure: May cause severe irritation to the nose, throat, and upper respiratory tract, mouth, throat, and esophagus. Contact with skin can cause mild to moderate irritation. May cause chemical burns in eyes or on skin as it reacts with moisture on living tissue.

Acute and Chronic Effects: Barium compounds may cause severe gastroenteritis, including abdominal pain, vomiting and diarrhea, tremors, faintness, paralysis of the arms and legs, and slow or irregular heartbeat. Severe cases may produce collapse and death due to respiratory failure. Soluble barium compounds are more likely to cause these effects than insoluble compounds. Inhalation of fumes may cause sore throat, coughing, labored breathing, and irritation of the respiratory tract as well as the above symptoms. Chronic exposure to barium may cause sensitization, chronic barium poisoning, dermatitis, corneal opacity and blindness.

Acute Toxicity: No data

Carcinogenicity: **NTP**: Not identified as carcinogenic **IARC**: Not identified as carcinogenic

To the best of our knowledge the chemical, physical and toxicological characteristics of the substance are not fully known.

12 ECOLOGICAL INFORMATION

Ecotoxicity: No data

Persistence and Degradability: No data

Bioaccumulative Potential: No data

Mobility in Soil: No data

Other Adverse Effects: Do not allow material to be released to the environment. No further relevant information available.

13 DISPOSAL CONSIDERATIONS

Waste Disposal Method:

Product: Dispose of in accordance with Federal, State and Local regulations.

Packaging: Dispose of in accordance with Federal, State and Local regulations.

14 TRANSPORT INFORMATION

UN Number: UN1400

UN Proper Shipping Name: Barium

Transport Hazard Class:	4.3
Packing Group:	II
Marine Pollutant:	No
Special Precautions:	Warning, substances which, in contact with water, emit flammable gases.

15 REGULATORY INFORMATION

TSCA Listed: All components are listed.

Regulation (EC) No 1272/2008 (CLP): Substances and mixtures which, in contact with water, emit flammable gases, category 2, Skin corrosion/irritation, category 2, Eye damage/irritation, category 2A.

Canada WHMIS Classification (CPR, SOR/88-66): Substances and mixtures which, in contact with water, emit flammable gases, Skin corrosion/irritation, Eye damage/irritation.

HMIS Ratings: **Health**: 2 **Flammability**: 3 **Physical**: 1

NFPA Ratings: **Health**: 2 **Flammability**: 3 **Instability**: 1 **Special Hazard**: W

Chemical Safety Assessment: A chemical safety assessment has not been carried out.

16 OTHER INFORMATION

The information contained in this document is based on the state of our knowledge at the time of publication and is believed to be correct, but does not purport to be all inclusive and shall be used only as a guide. ESPI Metals makes no representation, warranty, or guarantee of any kind with respect to the information contained in this document or any use of the product based on this information. ESPI Metals shall not be held liable for any damages resulting from handling or from contact with the above product. Users should satisfy themselves that they have all current data relevant to their particular use.

Prepared by: ESPI Metals

Revised/Reviewed: July 2015

Teck

CADMIUM METAL
SAFETY DATA SHEET

SECTION 1. IDENTIFICATION

Product Identity: Cadmium Metal

Trade Names and Synonyms: Tadanac Cadmium; Cadmium Balls; Cadmium Sticks; Cd; ASTM B440.

Manufacturer:
Teck Metals Ltd.
Trail Operations
Trail, British Columbia
V1R 4L8
Emergency Telephone: 250-364-4214

Supplier:
Teck Metals Ltd.
#1700 – 11 King Street West
Toronto, Ontario
M5H 4C7

Preparer:
Teck Metals Ltd.
Suite 3300 – 550 Burrard Street
Vancouver, British Columbia
V6C 0B3

Date of Last Review: April 15, 2015.

Date of Last Edit: April 15, 2015.

Product Use: Cadmium metal is used as a constituent in easily fusible alloys, in soft solder and solder for aluminum, in electroplating, as a deoxidizer in nickel plating, in process engraving, in electrodes for cadmium vapour lamps, in photoelectric cells, in nickel-cadmium storage batteries, and in pigment manufacture.

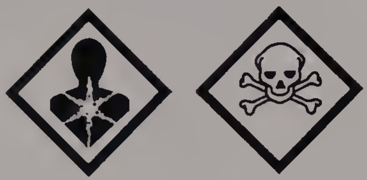
SECTION 2. HAZARDS IDENTIFICATION

CLASSIFICATION:

Health		Physical	Environmental
Acute Toxicity (Oral)	**– Category 3**	Does not meet criteria for any Physical Hazard	**Aquatic Toxicity Long Term – Category 4**
Acute Toxicity (Inhalation)	**– Category 1**		
Skin Irritation	– Does not meet criteria		
Eye Irritation	– Does not meet criteria		
Sensitization	– Does not meet criteria		
Mutagenicity	– Does not meet criteria		
Carcinogenicity	**– Category 1A**		
Reproductive Toxicity	**– Category 2**		
Specific Target Organ Toxicity			
(Acute Exposure)	**– Category 1**		
(Chronic Exposure)	**– Category 1**		

LABEL:

Symbols:



Signal Word: DANGER

Hazard Statements

DANGER!
Toxic if swallowed.
Fatal if inhaled as freshly generated cadmium oxide fume.
May cause cancer through inhalation of dust/fume.
Suspected of damaging fertility or the unborn child.
Causes damage to organs through single exposure or prolonged / repeated inhalation of dust or particularly fume.
May cause long lasting harmful effects to aquatic life.

Precautionary Statements:

Do not handle until all safety precautions have been read and understood.
Use only outdoors or in a well-ventilated area.
Do not breathe cadmium fumes or dust.
Wear respiratory protection where cadmium fumes may be generated.
Use other personal protective equipment as required.
Do not eat, drink or smoke when using this product.
Wash hands thoroughly after handling this product.
Avoid release to the environment.
IF INHALED: Remove person to fresh air and keep at rest in a position comfortable for breathing.
Immediately call a POISON CENTRE or doctor/physician.
Specific treatment for possible pulmonary edema is urgent following cadmium fume exposure.
IF SWALLOWED: Rinse mouth. Immediately call a POISON CENTRE or doctor/physician.
If concerned about exposure, get medical advice.

Emergency Overview: A bluish-silver lustrous metal that does not burn in bulk. Clouds of finely-divided dust are a fire and explosion hazard, however. When heated strongly in air cadmium oxide fumes will be generated. Freshly formed cadmium fume is an intense pulmonary irritant and may result in development of pulmonary edema several hours after exposure. Inhalation or ingestion of dust or fumes may produce both acute and chronic health effects. Probable cancer hazard. A self-contained breathing apparatus (SCBA) and full protective clothing are required for all emergency response personnel when cadmium is involved in a fire situation. Do NOT use water or foam. Apply dry chemical, dry sand, or special powder extinguishing media.

Potential Health Effects: Cadmium dust and fume have both acute and chronic health effects. Cadmium dust is a pulmonary irritant. Freshly formed cadmium fume is an intense pulmonary irritant, resulting in respiratory distress and possible pulmonary edema that may develop as much as 48 hours after exposure. In severe cases death may result. Long term exposures may cause kidney dysfunction and lung injury (emphysema) as well as other symptoms. Cadmium is classified as a carcinogen or probable carcinogen by IARC, ACGIH, NTP, OSHA and the EU (see Toxicological Information, Section 11).

Potential Environmental Effects: While cadmium metal has relatively low bioavailability, compounds which it forms with other elements can be potentially toxic to biota at low concentrations. Bioaccumulation of cadmium occurs readily in aquatic and terrestrial food chains, specifically in plants and aquatic organisms (see Ecological Information, Section 12).

SECTION 3. COMPOSITION / INFORMATION ON INGREDIENTS

HAZARDOUS COMPONENTS	CAS Registry No.	CONCENTRATION (% wgt/wgt)
Cadmium	7440-43-9	99.97+%

Note: See Section 8 for Occupational Exposure Guidelines.

SECTION 4. FIRST AID MEASURES

Eye Contact: *Symptoms*: Eye irritation, redness. Gently brush product off face. Do not rub eye(s). Let the eye(s) water naturally for a few minutes. Look right and left, then up and down. If particle/dust does not come out, cautiously rinse eye(s) with lukewarm, gently flowing water for 5 minutes or until particle/dust is removed, while holding eyelid(s) open. If eye irritation persists, get medical advice/attention. DO NOT attempt to manually remove anything stuck to the eye.

Skin Contact: *Symptoms*: Skin soiling, irritation. ***Dust:*** Gently brush away excess product. Take off contaminated clothing, shoes and leather goods (e.g., watchbands, belts). Wash with plenty of lukewarm, gently flowing water and a non-abrasive soap for 5 minutes. If skin irritation occurs, get medical advice/attention. Wash contaminated clothing before re-use. ***Molten Metal:*** Flush

contact area to solidify and cool, but do not attempt to remove encrusted material or clothing. Cover burns and seek medical attention immediately.

Inhalation: ***Symptoms:*** Wheezing, coughing, throat/chest irritation. Take proper precautions to ensure your own safety before attempting rescue (e.g., wear appropriate protective equipment). Remove source of exposure or move person from exposure area to fresh air immediately and keep comfortable for breathing. Immediately call a Poison Control Centre/Doctor. If breathing is difficult, trained personnel should administer emergency oxygen if advised to do so by the Poison Control Centre/Doctor. DO NOT allow victim to move around unnecessarily. Treat pulmonary edema as a priority, even if no symptoms (i.e. wheezing, coughing, shortness of breath, etc.) are apparent. Symptoms of pulmonary edema can be delayed up to 48 hours after exposure. Quickly transport victim to an emergency care facility.

Ingestion: ***Symptoms:*** Stomach pain. Immediately call an emergency care facility/poison control centre. Have patient rinse mouth thoroughly with water. DO NOT INDUCE VOMITING. However, the irritant and emetic action of swallowed cadmium usually leads to spontaneous vomiting. If vomiting occurs naturally, have victim rinse mouth with water again, then lie the affected person on their side in the recovery position. If breathing has stopped, trained personnel should begin rescue breathing or, if the heart has stopped, immediately start cardiopulmonary resuscitation (CPR) or automated external defibrillation (AED).

SECTION 5. FIRE FIGHTING MEASURES

Fire and Explosion Hazards: Massive metal is not flammable or combustible. Finely-divided metallic dust or powder is a moderate fire hazard and moderate explosion hazard when dispersed in air at high concentrations and exposed to heat, flame or other ignition sources. Freshly formed cadmium powder, in contact with limited amounts of water, may heat spontaneously and may ignite combustible materials in contact with the powder. Fires and explosions may also occur upon contact with certain incompatible materials (see Stability and Reactivity, Section 10).

Extinguishing Media: Apply dry chemical, dry sand, or special powder extinguishing media (i.e. a Class D Extinguisher) to any burning pieces of metal and allow to cool. Do NOT use water, carbon dioxide, foam or Halon fire extinguishing agents on any burning or molten metal. Water may be ineffective for extinguishing fire but should be used to keep fire-exposed containers cool.

Fire Fighting: If possible, move material from fire area and cool material exposed to flame. Apply dry chemical, dry sand or special powder extinguishing media to burning cadmium. Highly toxic cadmium oxide fumes will evolve in fires. Fire fighters must be fully trained and wear full protective clothing including an approved, self-contained breathing apparatus which supplies a positive air pressure within a full face-piece mask.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Procedures for Cleanup: Control source of spillage if possible to do so safely. Restrict access to the area until completion of clean-up. Clean up spilled material immediately, observing precautions outlined below. Molten metal should be allowed to solidify prior to clean-up. If solid metal, wear gloves, pick up and return to process. If dust, wear recommended personal protective equipment (see below) and use methods that will minimize dust generation (e.g., vacuum solids). Return uncontaminated spilled material to the process if possible. Place contaminated and non-recyclable material into suitable labelled containers for later disposal. Treat or dispose of waste material in accordance with all local, regional and national requirements, as applicable.

Personal Precautions: Persons responding to an accidental release should wear protective clothing, gloves and a respirator (see also Section 8). Close-fitting safety goggles may be necessary in some circumstances to prevent eye contact with dust and fume. Where molten metal is involved, wear heat-resistant gloves and suitable clothing for protection from radiant heat and hot-metal splash as well as a respirator to protect against inhalation of cadmium fume. Workers should wash and change clothing following cleanup of a cadmium spill to prevent personal contamination with cadmium / cadmium oxide dust.

Environmental Precautions: Cadmium metal has relatively low bioavailability; however, compounds which it forms with other elements can be toxic to aquatic and terrestrial biota. Releases of the product to water and soil should be prevented.

SECTION 7. HANDLING AND STORAGE

Store cadmium in a DRY, covered area, away from incompatible materials and food or feedstuffs. Cadmium ingots suspected of containing moisture should be THOROUGHLY DRIED before being added to a molten bath. Otherwise, entrained moisture could expand explosively and spatter molten metal out of the bath.

SECTION 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Occupational Exposure Guidelines:

Component	ACGIH TLV	OSHA PEL	NIOSH REL
Cadmium	0.01 mg Cd/m^3 (total dust) 0.002 mg Cd/m^3 (respirable)	0.005 mg Cd/m^3 *OSHA SECAL** *0.015 or 0.05 mg/m^3*	Lowest feasible level

NOTE: OEGs for individual jurisdictions may differ from those given above. Check with local authorities for the applicable OEGs in your jurisdiction.

ACGIH - American Conference of Governmental Industrial Hygienists; OSHA - Occupational Safety and Health Administration; NIOSH - National Institute for Occupational Safety and Health. TLV – Threshold Limit Value, PEL – Permissible Exposure Limit, REL – Recommended Exposure Limit. SECAL – Separate Engineering Control Airborne Limit.

*Separate Engineering Control Airborne Limits: To be achieved in specified processes and work places where it is not possible to achieve the PEL through engineering and work practices alone. The OSHA SECAL for cadmium is 0.015 or 0.050 mg/m^3, depending on the processes involved. See Table 1 of 29 CFR § 1910.1027.

NOTE: The selection of the necessary level of engineering controls and personal protective equipment will vary depending upon the conditions of use and the potential for exposure. The following are therefore only general guidelines that may not fit all circumstances. Control measures to consider include:

Ventilation: Use adequate local or general ventilation to maintain the concentration of cadmium fumes in the working environment well below recommended occupational exposure limits. Supply sufficient replacement air to make up for air removed by the exhaust system. Local exhaust is strongly recommended for melting, casting, grinding and welding or flame cutting of cadmium.

Protective Clothing: Gloves and coveralls or other work clothing are recommended to prevent prolonged or repeated direct skin contact when cadmium is processed. Appropriate eye protection should be worn where fume or dust is generated. Where hot or molten metal is handled, heat resistant gloves, goggles or face shield, respirator and clothing to protect from radiant heat and hot metal splash should be worn. Safety type boots are recommended.

Respirators: Where cadmium dust or fumes are generated and cannot be controlled to within acceptable levels by engineering means, use appropriate NIOSH-approved respiratory protection equipment (a 42CFR84 Class N, R or P-100 particulate filter cartridge). When exposure levels are obviously high but the actual concentration is unknown, a self-contained breathing apparatus which supplies a positive air pressure within a full face-piece mask should be worn.

General Hygiene Considerations: Do not eat, drink or smoke in work areas. Thoroughly wash hands before eating, drinking, or smoking in appropriate, designated areas only. Work clothing should be removed immediately and laundered before reuse if it becomes heavily contaminated. Work clothing should be removed before leaving the plant site and should be changed daily if there is a reasonable probability that the clothing may be contaminated. If using a commercial or industrial laundry service, inform laundry personnel of contaminants' hazards. Workers should shower at the end of each work shift. A double locker-shower system with separate clean and dirty sides is required for cadmium handling operations to avoid cross-contamination of street clothes. Workers should not take dirty work clothes home and launder them with other personal clothing.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance:
Bluish-silver lustrous metal

Odour:
None

Odour Threshold:
Not Applicable

pH:
Not Applicable

Vapour Pressure:
1 mm of Hg @ 394°C
negligible @ 20°C

Vapour Density:
Not Applicable

Boiling Point/Range:
765°C

Melting Point/Range:
321°C

Relative Density (Water = 1)**:**
8.65

Evaporation Rate:
Not Applicable

Coefficient of Water/Oil Distribution:
Not Applicable

Solubility:
Insoluble in water

Flash Point:
Not Applicable

Flammable Limits (LEL/UEL)**:**
Not Applicable

Auto-ignition Temperature:
Not Applicable

SECTION 10. STABILITY AND REACTIVITY

Stability & Reactivity: Massive metal is stable and not considered reactive under normal temperatures and pressures. Hazardous polymerization or runaway reactions will not occur. Metal surfaces tarnish on exposure to moist air. Finely powdered metal or dust can be ignited from a dust cloud in air. Freshly formed cadmium powder, in contact with limited amounts of water, may heat spontaneously and may ignite combustible materials in contact with the powder.

Incompatibilities: Cadmium reacts vigorously with oxidizing agents such as peroxides, chlorates, nitrates, and halogens or interhalogen compounds such as chlorine trifluoride as well as with elemental sulphur, zinc, selenium, or tellurium. Mixtures with nitric acid liberate toxic fumes of nitrogen oxides. Violent explosions can occur when the metal is in contact with fused ammonium nitrate or immersed in hydrazoic acid. Burning metal reacts violently with fire extinguishing agents such as water, foam, carbon dioxide or Halons. Cadmium metal reacts with strong acids giving off flammable hydrogen gas.

Hazardous Decomposition Products: High temperature operations such as oxy-acetylene cutting or burning, electric arc welding or overheating a molten bath will generate highly toxic cadmium oxide fumes. These brownish fumes are highly soluble in body fluids and the particle size of the metal fumes is largely within the respirable size range, which increases the likelihood of inhalation and deposition of the fume within the body.

SECTION 11. TOXICOLOGICAL INFORMATION

General: Cadmium dust and fume are both pulmonary irritants, but freshly generated cadmium fume is an intense irritant and its small particle size allows it to reach into the lung more readily. The onset of symptoms is frequently delayed by 4 to 10 hours after exposure and is aggravated by physical effort. Pulmonary edema may then develop rapidly. The mortality rate from acute pulmonary disease is about 20% according to the ACGIH. Those surviving an episode of acute poisoning generally recover slowly but without apparent residual effects.

Chronic exposure to cadmium has been associated with a wide variety of gastrointestinal symptoms, pulmonary edema, and kidney malfunction with increased excretion of a specific low molecular weight protein (beta-2-microglobulin). The body to a large extent retains absorbed cadmium, and excretion is very slow. Cadmium has been linked to both prostate cancer and lung cancer, though several researchers have questioned the association with prostate cancer recently.

Individuals with pre-existing lung, liver, kidney, and blood ailments should be precluded from exposure until approved by a physician. Initial and periodic medical examinations are recommended for persons exposed to levels above the exposure limits of cadmium.

Acute:
Skin/Eye: Contact with dust or fume may cause local irritation but would not cause tissue damage.

Inhalation: Fumes of cadmium (i.e. cadmium oxide) are highly toxic by inhalation. They may cause serious systemic poisoning and possible permanent damage to the lungs. Early symptoms of excessive exposure include dryness of the throat; irritation of the nose, throat, and respiratory tract; headache; coughing, and a metallic taste. After a delay of several hours (up to 10), a person may develop constriction of the chest, persistent cough, and progressive shortness of breath. There may be headache, chills, diarrhea, muscle aches, nausea, vomiting, irritability, and restlessness. Pulmonary congestion may progress rapidly causing wheezing and symptoms of oxygen deficiency. Death may follow. Recovery from an acute exposure episode is slow but generally without ongoing or lingering effects. Milder cases of acute exposure have produced symptoms resembling metal fume fever with some symptoms and signs of acute gastroenteritis as well.

Ingestion: Ingestion of excessive quantities of cadmium dust may cause salivation, choking, nausea, vomiting, diarrhea, abdominal pain, tenseness, blurred vision, dizziness, vertigo, and headache. Convulsions, exhaustion, collapse, shock, and unconsciousness may occur. Death has followed within 24 hours from shock or after 7 to 14 days from acute kidney failure or cardiopulmonary depression.

Chronic: Prolonged exposure to cadmium dust and/or fume may cause loss of sense of smell, occasional ulcerations of the nasal passages, rhino laryngitis, cough, shortness of breath, mild anemia, sleeplessness, irritability, loss of appetite, and cadmium-yellow fringe on teeth. The primary target organ for chronic cadmium effects is the kidney with increased excretion of a specific low molecular weight protein (beta-2-microglobulin). Damage to the lungs (of the emphysematous type) has been reported in some studies of cadmium-exposed workers but not found in other studies. Cigarette tobacco contains cadmium and smoking adds to the daily intake of cadmium which may increase the risk of cumulative toxic effects. Clinical evidence of the cumulative effects of cadmium may appear after exposure has ceased. Disease may then be progressive.

The International Agency for Research on Cancer (IARC) has classified cadmium and certain cadmium compounds as Group 1 Carcinogens (carcinogenic to humans). The American Conference of Governmental Industrial Hygienists (ACGIH) classifies cadmium as a Suspected Human Carcinogen (A2). The National Toxicology Program (NTP) classifies cadmium as a Known Human Carcinogen and OSHA lists cadmium as a Carcinogen. The European Union (EU) classifies cadmium as a Category 2 (Probable) Carcinogen.

Animal Toxicity:

Hazardous Ingredient:	Acute Oral Toxicity:	Acute Dermal Toxicity:	Acute Inhalation Toxicity:
Cadmium	LD_{50} † = 225 mg/kg	No Data	LC_{50} ‡ = 11 mg/m^3/4 hr (CdO fume)

† LD_{50}, Rat, Oral, ‡ LC_{50}, Rat, Inhalation, 4 hour

SECTION 12. ECOLOGICAL INFORMATION

While cadmium metal is relatively insoluble, its processing or extended exposure in aquatic and terrestrial environments may lead to the release of cadmium in bioavailable forms. Compared to most other metals, cadmium is relatively mobile and toxic in the aquatic environment. Water hardness, pH and dissolved organic carbon are three major factors which regulate the degree of cadmium toxicity. In soils, higher acidity (lower pH) results in the release of cadmium ions, which may, in turn, yield higher toxicity to soil organisms and uptake of cadmium by plants.

Cadmium is strongly accumulated by all organisms through the food chain. Bioaccumulation in aquatic organisms is greatest in invertebrates, followed by fish and aquatic plants. Bioaccumulation of cadmium into terrestrial plants can result in higher cadmium concentrations in terrestrial animals that feed on the plants.

SECTION 13. DISPOSAL CONSIDERATIONS

If material cannot be returned to process, dispose of in accordance with applicable regulations.

SECTION 14. TRANSPORT INFORMATION

PROPER SHIPPING NAME .... Not a regulated product in ingot form
TRANSPORT CANADA AND U.S. DOT HAZARD CLASSIFICATION .... Not Applicable
TRANSPORT CANADA AND U.S. DOT PIN .... Not Applicable
MARINE POLLUTANT.. No
IMO CLASSIFICATION .... Not Regulated

SECTION 15. REGULATORY INFORMATION

U.S.
INGREDIENTS LISTED ON TSCA INVENTORY.................................... Yes

HAZARDOUS UNDER HAZARD COMMUNICATION STANDARD......... Yes

CERCLA SECTION 103 HAZARDOUS SUBSTANCES .... Cadmium .... Yes........RQ: 10lbs. (4.54 kg.)*
*reporting not required when diameter of the pieces of solid metal released is equal to or exceeds 100 micrometers (0.004 inches).

EPCRA SECTION 302 EXTREMELY HAZARDOUS SUBSTANCE .... No

EPCRA SECTION 311/312 HAZARD CATEGORIES .... Immediate (Acute) Health Hazard – Toxic
Delayed (Chronic) Health Hazard – Target Organ Effects (Kidney)
Delayed (Chronic) Health Hazard - Carcinogen

EPCRA SECTION 313 TOXIC RELEASE INVENTORY:........................ Cadmium
CAS NO. 7440-43-9 Percent by Weight: 99.97+

SECTION 16. OTHER INFORMATION

Date of Original Issue: July 23, 1997 **Version:** 01 *(first edition)*

Date of Latest Revision: April 15, 2015 **Version:** 11

The information in this Safety Data Sheet is based on the following references:

- American Conference of Governmental Industrial Hygienists, 2004, Documentation of the Threshold Limit Values and Biological Exposure Indices, Seventh Edition plus updates.
- American Conference of Governmental Industrial Hygienists, 2014, Threshold Limit Values for Chemical Substances and Physical Agents and Biological Exposure Indices.
- American Conference of Governmental Industrial Hygienists, 2014, Guide to Occupational Exposure Values.

- Australian National Industrial Chemicals Notification & Assessment Scheme (NICNAS) - Human Health Tier II Assessment for Cadmium.
- Bretherick's Handbook of Reactive Chemical Hazards, 20th Anniversary Edition (P. G. Urben Ed.) 1995.
- Canadian Centre for Occupational Health and Safety, Hamilton, ON, CHEMINFO Record No. 3454 Cadmium.
- Chemical Hazards of the Workplace, Nick H. Proctor and James P. Hughes, J. B. Lippincott Company, Philadelphia, 1978.
- European Chemical Agency (ECHA) - Registered Substances Database - Cadmium (last accessed 3 February 2015).
- European Economic Community, Commission Directives 91/155/EEC and 67/548/EEC.
- Health Council of the Netherlands, Cadmium and its compounds - evaluation of the effects on reproduction Report No. 2000-04OSH (3 mei 2000).
- Industry Canada, SOR/2015-17, Hazardous Products Regulations.
- International Agency for Research on Cancer (IARC), Monographs on the Evaluation of the Carcinogenic Risk of Chemicals to Man, 1972 – present, (multi-volume work), World Health Organization, Geneva.
- International Chemical Safety Cards (WHO/IPCS/ILO), ICSC:0020 – Cadmium (April 2005).
- International Labour Office (WHO/ILO) Encyclopedia of Occupational Health & Safety 4th Ed. CD-ROM Version (1998).
- Merck & Co., Inc., 2001, The Merck Index, An Encyclopedia of Chemicals, Drugs, and Biologicals, Thirteenth Edition.
- National Library of Medicine, National Toxicology Information Program, Hazardous Substance Data Bank. (On line version).
- Oak Ridge National Laboratory, Health Sciences Research Division, Toxicity Summary for Cadmium. - November 1991.
- Patty's Toxicology, 5th Edition, (E Bingham, B Cohrssen & C H Powell, Ed.) 2001.
- Scientific Basis for Swedish Occupational Standards XXIV - Cadmium (February 5, 2003).
- U.S. Dept. of Health and Human Services, National Institute for Occupational Safety and Health, Registry of Toxic Effects of Chemical Substances (RTECS) (On line version).
- U. S. Dept. of Health and Human Services, National Institute of Environmental Health Sciences, National Toxicology Program (NTP), 12th Report on Carcinogens, June 2011.
- U.S. Dept. of Health and Human Services, Public Health Service, Agency for Toxic Substances and Disease Registry, Toxicological Profile for Cadmium (September 2012).
- U.S. Occupational Safety and Health Administration, 1989, Code of Federal Regulations, Title 29, Part 1910.127.

Notice to Reader

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Fisher Scientific

Part of Thermo Fisher Scientific

SAFETY DATA SHEET

Creation Date 13-Sep-2013 **Revision Date** 21-Jul-2015 **Revision Number** 2

1. Identification

Product Name	**Chromium**
Cat No. :	**C318-500**
Synonyms	Chrome
Recommended Use	Laboratory chemicals.
Uses advised against	No Information available

Details of the supplier of the safety data sheet

Company
Fisher Scientific
One Reagent Lane
Fair Lawn, NJ 07410
Tel: (201) 796-7100

Emergency Telephone Number
CHEMTREC®, Inside the USA: 800-424-9300
CHEMTREC®, Outside the USA: 001-703-527-3887

2. Hazard(s) identification

Classification

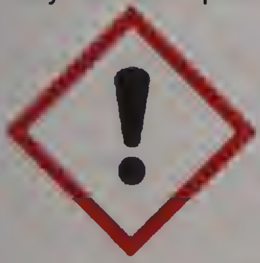
This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Specific target organ toxicity (single exposure) Target Organs - Respiratory system.	Category 3

Label Elements

Signal Word
Warning

Hazard Statements
May cause respiratory irritation



Precautionary Statements
Prevention
Avoid breathing dust/fume/gas/mist/vapors/spray
Use only outdoors or in a well-ventilated area

Inhalation
IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
Call a POISON CENTER or doctor/physician if you feel unwell
Storage
Store in a well-ventilated place. Keep container tightly closed
Store locked up
Disposal
Dispose of contents/container to an approved waste disposal plant
Hazards not otherwise classified (HNOC)
Very toxic to aquatic life

3. Composition / information on ingredients

Component	CAS-No	Weight %
Chromium	7440-47-3	>95

4. First-aid measures

General Advice	If symptoms persist, call a physician.
Eye Contact	Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Obtain medical attention.
Skin Contact	Wash off immediately with plenty of water for at least 15 minutes. Obtain medical attention.
Inhalation	Move to fresh air. If breathing is difficult, give oxygen. Obtain medical attention.
Ingestion	Do not induce vomiting. Obtain medical attention.
Most important symptoms/effects	None reasonably foreseeable.
Notes to Physician	Treat symptomatically

5. Fire-fighting measures

Unsuitable Extinguishing Media	Carbon dioxide (CO2)
Flash Point	Not applicable
Method -	No information available
Autoignition Temperature	Not applicable
Explosion Limits	
Upper	No data available
Lower	No data available
Sensitivity to Mechanical Impact	No information available
Sensitivity to Static Discharge	No information available

Specific Hazards Arising from the Chemical
Dust can form an explosive mixture in air. Do not allow run-off from fire fighting to enter drains or water courses.

Hazardous Combustion Products
Chromium oxide
Protective Equipment and Precautions for Firefighters
As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

NFPA

Health	Flammability	Instability	Physical hazards
2	1	1	N/A

6. Accidental release measures

Personal Precautions Ensure adequate ventilation. Use personal protective equipment. Avoid dust formation.

Environmental Precautions Do not flush into surface water or sanitary sewer system. Do not allow material to contaminate ground water system. Prevent product from entering drains. Local authorities should be advised if significant spillages cannot be contained. See Section 12 for additional ecological information. Avoid release to the environment. Collect spillage.

Methods for Containment and Clean Up Avoid dust formation. Sweep up or vacuum up spillage and collect in suitable container for disposal. Keep in suitable, closed containers for disposal.

7. Handling and storage

Handling Avoid dust formation. Wear personal protective equipment. Ensure adequate ventilation. Do not get in eyes, on skin, or on clothing. Avoid ingestion and inhalation.

Storage Keep containers tightly closed in a dry, cool and well-ventilated place. Store under an inert atmosphere.

8. Exposure controls / personal protection

Exposure Guidelines

Component	ACGIH TLV	OSHA PEL	NIOSH IDLH
Chromium	TWA: 0.5 mg/m^3	(Vacated) TWA: 1 mg/m^3 TWA: 1 mg/m^3	IDLH: 250 mg/m^3 TWA: 0.5 mg/m^3

Component	Quebec	Mexico OEL (TWA)	Ontario TWAEV
Chromium	TWA: 0.5 mg/m^3	TWA: 0.5 mg/m^3	TWA: 0.5 mg/m^3

Legend

ACGIH - American Conference of Governmental Industrial Hygienists
OSHA - Occupational Safety and Health Administration
NIOSH IDLH: The National Institute for Occupational Safety and Health Immediately Dangerous to Life or Health

Engineering Measures Ensure adequate ventilation, especially in confined areas. Ensure that eyewash stations and safety showers are close to the workstation location.

Personal Protective Equipment

Eye/face Protection Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166.

Skin and body protection Wear appropriate protective gloves and clothing to prevent skin exposure.

Respiratory Protection Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.

Hygiene Measures Handle in accordance with good industrial hygiene and safety practice.

9. Physical and chemical properties

Physical State	Powder
Appearance	Silver
Odor	Odorless
Odor Threshold	No information available
pH	No information available
Melting Point/Range	1857.2 °C / 3375 °F

Boiling Point/Range	2640 °C / 4784 °F
Flash Point	Not applicable
Evaporation Rate	Not applicable
Flammability (solid,gas)	No information available
Flammability or explosive limits	
Upper	No data available
Lower	No data available
Vapor Pressure	No information available
Vapor Density	Not applicable
Relative Density	7.2
Solubility	Insoluble in water
Partition coefficient; n-octanol/water	No data available
Autoignition Temperature	Not applicable
Decomposition Temperature	No information available
Viscosity	Not applicable
Molecular Formula	Cr
Molecular Weight	51.996

10. Stability and reactivity

Reactive Hazard	None known, based on information available
Stability	Sensitive to air.
Conditions to Avoid	Incompatible products. Excess heat. Avoid dust formation.
Incompatible Materials	Strong oxidizing agents, Strong acids
Hazardous Decomposition Products	Chromium oxide
Hazardous Polymerization	Hazardous polymerization does not occur.
Hazardous Reactions	None under normal processing.

11. Toxicological information

Acute Toxicity

Component Information	
Toxicologically Synergistic Products	No information available

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Irritation	May cause irritation of respiratory tract
Sensitization	No information available
Carcinogenicity	The table below indicates whether each agency has listed any ingredient as a carcinogen.

Component	CAS-No	IARC	NTP	ACGIH	OSHA	Mexico
Chromium	7440-47-3	Not listed	Not listed	Not listed	Not listed	Not listed

Mutagenic Effects	No information available
Reproductive Effects	No information available.
Developmental Effects	No information available.
Teratogenicity	No information available.
STOT - single exposure	Respiratory system
STOT - repeated exposure	None known

Aspiration hazard	No information available
Symptoms / effects,both acute and delayed	No information available
Endocrine Disruptor Information	No information available
Other Adverse Effects	The toxicological properties have not been fully investigated. See actual entry in RTECS for complete information.

12. Ecological information

Ecotoxicity

The product contains following substances which are hazardous for the environment. Very toxic to aquatic organisms.

Component	Freshwater Algae	Freshwater Fish	Microtox	Water Flea
Chromium	Not listed	LC50: 14.3 mg/l/96 H (Pimephales promelas)	Not listed	EC50: 0.07 mg/l/48 H

Persistence and Degradability	Insoluble in water
Bioaccumulation/ Accumulation	No information available.
Mobility	Is not likely mobile in the environment due its low water solubility.

13. Disposal considerations

Waste Disposal Methods	Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. Chemical waste generators must also consult local, regional, and national hazardous waste regulations to ensure complete and accurate classification.

14. Transport information

DOT	
UN-No	UN3077
Proper Shipping Name	ENVIRONMENTALLY HAZARDOUS SUBSTANCES, SOLID, N.O.S.
Proper technical name	Chromium
Hazard Class	9
Packing Group	III
TDG	Not regulated
UN-No	UN3077
Proper Shipping Name	ENVIRONMENTALLY HAZARDOUS SUBSTANCES, SOLID, N.O.S.
Hazard Class	9
Packing Group	III
IATA	
UN-No	UN3077
Proper Shipping Name	Environmentally hazardous substance, solid, n.o.s
Hazard Class	9
Packing Group	III
IMDG/IMO	
UN-No	UN3077
Proper Shipping Name	Environmentally hazardous substance, solid, n.o.s
Hazard Class	9
Packing Group	III

15. Regulatory information

International Inventories

Component	TSCA	DSL	NDSL	EINECS	ELINCS	NLP	PICCS	ENCS	AICS	IECSC	KECL
Chromium	X	X	-	231-157-5	-		X	-	X	X	X

Legend:
X - Listed
E - Indicates a substance that is the subject of a Section 5(e) Consent order under TSCA.

F - Indicates a substance that is the subject of a Section 5(f) Rule under TSCA.
N - Indicates a polymeric substance containing no free-radical initiator in its inventory name but is considered to cover the designated polymer made with any free-radical initiator regardless of the amount used.
P - Indicates a commenced PMN substance
R - Indicates a substance that is the subject of a Section 6 risk management rule under TSCA.
S - Indicates a substance that is identified in a proposed or final Significant New Use Rule
T - Indicates a substance that is the subject of a Section 4 test rule under TSCA.
XU - Indicates a substance exempt from reporting under the Inventory Update Rule, i.e. Partial Updating of the TSCA Inventory Data Base Production and Site Reports (40 CFR 710(B).
Y1 - Indicates an exempt polymer that has a number-average molecular weight of 1,000 or greater.
Y2 - Indicates an exempt polymer that is a polyester and is made only from reactants included in a specified list of low concern reactants that comprises one of the eligibility criteria for the exemption rule.

U.S. Federal Regulations

TSCA 12(b) Not applicable

SARA 313

Component	CAS-No	Weight %	SARA 313 - Threshold Values %
Chromium	7440-47-3	>95	1.0

SARA 311/312 Hazardous Categorization

Acute Health Hazard	Yes
Chronic Health Hazard	No
Fire Hazard	No
Sudden Release of Pressure Hazard	No
Reactive Hazard	No

Clean Water Act

Component	CWA - Hazardous Substances	CWA - Reportable Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants
Chromium	-	-	X	X

Clean Air Act

Component	HAPS Data	Class 1 Ozone Depletors	Class 2 Ozone Depletors
Chromium	X		-

OSHA Occupational Safety and Health Administration
Not applicable

CERCLA
Not applicable

Component	Hazardous Substances RQs	CERCLA EHS RQs
Chromium	5000 lb 10 lb	-

California Proposition 65 This product does not contain any Proposition 65 chemicals

State Right-to-Know

Component	Massachusetts	New Jersey	Pennsylvania	Illinois	Rhode Island
Chromium	X	X	X	X	X

U.S. Department of Transportation

Reportable Quantity (RQ):	N
DOT Marine Pollutant	N
DOT Severe Marine Pollutant	N

U.S. Department of Homeland Security
This product does not contain any DHS chemicals.

Other International Regulations

Mexico - Grade	No information available

Canada
This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all the information required by the CPR

WHMIS Hazard Class	D2B Toxic materials

16. Other information

Prepared By	Regulatory Affairs Thermo Fisher Scientific Email: EMSDS.RA@thermofisher.com
Creation Date	13-Sep-2013
Revision Date	21-Jul-2015
Print Date	21-Jul-2015
Revision Summary	This document has been updated to comply with the US OSHA HazCom 2012 Standard replacing the current legislation under 29 CFR 1910.1200 to align with the Globally Harmonized System of Classification and Labeling of Chemicals (GHS)

Disclaimer
The information provided on this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guide for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered as a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other material or in any process, unless specified in the text.

End of SDS

FLINN SCIENTIFIC, INC.
Safety Data Sheet (SDS)

SDS #: 432.00

Revision Date: March 25, 2014

SECTION 1 — CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Lead

Flinn Scientific, Inc. P.O. Box 219, Batavia, IL 60510 (800) 452-1261
CHEMTREC Emergency Phone Number: (800) 424-9300

Signal Word **DANGER**

SECTION 2 — HAZARDS IDENTIFICATION

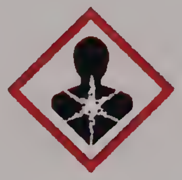
Hazard class: Acute toxicity, oral and inhalation (Category 4). Harmful if swallowed or inhaled (H302+H332). Do not eat, drink or smoke when using this product (P270). Avoid breathing dust and fumes (P261).

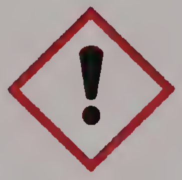
Hazard class: Carcinogenicity (Category 2). Suspected of causing cancer (H351). Obtain special instructions before use (P201). Do not handle until all safety precautions have been read and understood (P202). Use personal protective equipment as required (P281). Elemental lead is a possible human carcinogen (IARC-2B).

Hazard class: Reproductive toxicity (Category 1A). May damage fertility or the unborn child (H360).

Hazard class: Specific target organ toxicity, repeated exposure (Category 2). May cause damage to organs through prolonged or repeated exposure (H373). Do not eat, drink or smoke when using this product (P270).

Pictograms





SECTION 3 — COMPOSITION, INFORMATION ON INGREDIENTS

Component Name	CAS Number	Formula	Formula Weight	Concentration
Lead Forms: foil, sheets, shot, strips, and wire.	7439-92-1	Pb	207.19	

SECTION 4 — FIRST AID MEASURES

If exposed or concerned: Get medical advice or attention (P308+P313).
If inhaled: Remove victim to fresh air and keep at rest in a position comfortable for breathing (P304+P340).
If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do so. Continue rinsing.
If on skin: Wash with plenty of water.
If swallowed: Rinse mouth. Immediately call a POISON CENTER or physician (P301+P310+P330).

SECTION 5 — FIRE FIGHTING MEASURES

Finely divided lead dust is flammable.
Molten metal may release toxic fumes of lead.
In case of fire: Use a tri-class dry chemical fire extinguisher.

NFPA CODE
None established

SECTION 6 — ACCIDENTAL RELEASE MEASURES

Sweep up, place in sealed bag or container and dispose. Ventilate area and wash spill site after material pickup is complete. See Sections 8 and 13 for further information.

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SECTION 7 — HANDLING AND STORAGE

Flinn Suggested Chemical Storage Pattern: Inorganic #1. Store with metals and metal hydrides.
Use fume hood when handling powder form.

SECTION 8 — EXPOSURE CONTROLS, PERSONAL PROTECTION

Wear protective gloves, protective clothing, and eye protection. Wash hands thoroughly after handling. Use fume hood when handling powder form.
Exposure guidelines: PEL/TLV 0.05 mg/m^3 (OSHA/ACGIH)

SECTION 9 — PHYSICAL AND CHEMICAL PROPERTIES

Heavy, ductile, gray solid. Odorless.
Soluble: Dilute nitric acid. Insoluble in water.
Lead wire also contains 1% antimony (CAS #7440-36-0)

Boiling point: 1740 °C
Melting point: 327.4 °C
Specific gravity: 11.35

SECTION 10 — STABILITY AND REACTIVITY

Avoid strong acids, ammonium nitrate, hydrogen peroxide, sodium azide, zirconium, sodium acetylide, and chlorine.
Shelf life: Indefinite, if stored properly.

SECTION 11 — TOXICOLOGICAL INFORMATION

Acute effects: Convulsions, seizures, weakness, muscle cramps, methemoglobinemia.
Chronic effects: Anemia, reproductive hazard, possible carcinogen.
Target organs: Nerves, brain, blood, kidneys, female/male reproductive system

ORL-Pigeon LDL_0: 160 mg/kg
IHL-Human LCL_0: 10 ug/m^3
SKN-RBT LD_{50}: N.A.

N.A. = Not available, not all health aspects of this substance have been fully investigated.

SECTION 12 — ECOLOGICAL INFORMATION

Accumulates in soil and water. Bioaccumulates in animals. Very toxic to aquatic life with long lasting effects

SECTION 13 — DISPOSAL CONSIDERATIONS

Please review all federal, state and local regulations that may apply before proceeding.
Flinn Suggested Disposal Method #27d is one option.

SECTION 14 — TRANSPORT INFORMATION

Shipping name: Not regulated. Hazard class: N/A. UN number: N/A.

N/A = Not applicable

SECTION 15 — REGULATORY INFORMATION

TSCA-listed, EINECS-listed (231-100-4), RCRA code D008.

SECTION 16 — OTHER INFORMATION

This Safety Data Sheet (SDS) is for guidance and is based upon information and tests believed to be reliable. Flinn Scientific, Inc. makes no guarantee of the accuracy or completeness of the data and shall not be liable for any damages relating thereto. The data is offered solely for your consideration, investigation, and verification. The data should not be confused with local, state, federal or insurance mandates, regulations, or requirements and CONSTITUTE NO WARRANTY. Any use of this data and information must be determined by the science instructor to be in accordance with applicable local, state or federal laws and regulations. The conditions or methods of handling, storage, use and disposal of the product(s) described are beyond the control of Flinn Scientific, Inc. and may be beyond our knowledge. FOR THIS AND OTHER REASONS, WE DO NOT ASSUME RESPONSIBILITY AND EXPRESSLY DISCLAIM LIABILITY FOR LOSS, DAMAGE OR EXPENSE ARISING OUT OF OR IN ANY WAY CONNECTED WITH THE HANDLING, STORAGE, USE OR DISPOSAL OF THIS PRODUCT(S).

Consult your copy of the *Flinn Science Catalog/Reference Manual* for additional information about laboratory chemicals.

Revision Date: March 25, 2014

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Safety Data Sheet
Mercury (Metallic)

SDS Revision Date: **05/01/2015**

1. Identification

1.1. Product identifier

Product Identity	Mercury (Metallic)
Alternate Names	Quicksilver; Hydrargyrum; Liquid Silver

1.2. Relevant identified uses of the substance or mixture and uses advised against

Intended use	See Technical Data Sheet.
Application Method	See Technical Data Sheet.

1.3. Details of the supplier of the safety data sheet

Company Name

WM Mercury Waste Inc.
21211 Durand Avenue
Union Grove, WI 53182

Emergency	
CHEMTREC (USA)	(800) 424-9300
Customer Service: WM Mercury Waste Inc.	(800) 741-3343

2. Hazard(s) identification

2.1. Classification of the substance or mixture

Acute Tox. 2;H330	Fatal if inhaled.
Repr. 1B;H360D	May damage the unborn child.
STOT RE 1;H372	Causes damage to organs through prolonged or repeated exposure. Specific Target Organs: (Central Nervous System)
Aquatic Chronic 1;H410	Very toxic to aquatic life with long lasting effects.

2.2. Label elements

Using the Toxicity Data listed in section 11 and 12 the product is labeled as follows.

Danger

H330 Fatal if inhaled.

H360D May damage the unborn child.

H372 Causes damage to organs through prolonged or repeated exposure.

H410 Very toxic to aquatic life with long lasting effects.

[Prevention]:

P201 Obtain special instructions before use.
P202 Do not handle until all safety precautions have been read and understood.
P260 Do not breathe mist / vapors / spray.
P264 Wash thoroughly after handling.
P270 Do not eat, drink or smoke when using this product.
P271 Use only outdoors or in a well-ventilated area.
P273 Avoid release to the environment.
P281 Use personal protective equipment as required.
P284 Wear respiratory protection.

[Response]:

P304+340 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
P308+313 IF exposed or concerned: Get medical advice / attention.
P310 Immediately call a POISON CENTER or doctor / physician.
P314 Get Medical advice / attention if you feel unwell.
P320 Specific treatment is urgent (see information on this label).
P391 Collect spillage.

[Storage]:

P403+233 Store in a well ventilated place. Keep container tightly closed.
P405 Store locked up.

[Disposal]:

P501 Dispose of contents / container in accordance with local / national regulations.

3. Composition/information on ingredients

This product contains the following substances that present a hazard within the meaning of the relevant State and Federal Hazardous Substances regulations.

Ingredient/Chemical Designations	Weight %	GHS Classification	Notes
Mercury **CAS Number: 0007439-97-6**	**100**	**Repr. 1B;H360D** **Acute tox. 2;H330** **STOT RE 1;H372** **Aquatic Acute 1;H400** **Aquatic Chronic 1;H410**	**[1][2]**

In accordance with paragraph (i) of §1910.1200, the specific chemical identity and/or exact percentage (concentration) of composition has been withheld as a trade secret.
[1] Substance classified with a health or environmental hazard.
[2] Substance with a workplace exposure limit.
[3] PBT-substance or vPvB-substance.
*The full texts of the phrases are shown in Section 16.

4. First aid measures

4.1. Description of first aid measures

General	In all cases of doubt, or when symptoms persist, seek medical attention. Never give anything by mouth to an unconscious person.
Inhalation	Remove to fresh air, keep patient warm and at rest. If breathing is irregular or stopped, give artificial respiration. If unconscious place in the recovery position and obtain immediate medical attention. Give nothing by mouth.
Eyes	Irrigate copiously with clean water for at least 15 minutes, holding the eyelids apart and seek medical attention.
Skin	Remove contaminated clothing. Wash skin thoroughly with soap and water or use a recognized skin cleanser.
Ingestion	If swallowed, wash out mouth with water, obtain immediate medical attention. Keep at rest. Do NOT induce vomiting.

4.2. Most important symptoms and effects, both acute and delayed

Overview	**Eye:** Contact with eyes may cause severe irritation, and possible eye burns. Vapors may cause eye irritation. **Skin:** May cause skin irritation. May be absorbed through the skin in harmful amounts. May cause skin sensitization, an allergic reaction, which becomes evident upon re-exposure to this material. Chronic exposure to mercury may cause permanent central nervous system damage, fatigue, weight loss, tremors, and personality changes. **Ingestion:** May cause gastrointestinal irritation with nausea, vomiting and diarrhea. May cause effects similar to those for inhalation exposure. **Inhalation:** Causes respiratory tract irritation. Inhalation of fumes may cause metal fume fever, which is characterized by flu-like symptoms with metallic taste, fever, chills, cough, weakness, chest pain, muscle pain and increased white blood cell count. May cause central nervous system effects including vertigo, anxiety, depression, muscle incoordination, and emotional instability. May cause severe respiratory tract irritation. **Chronic:** Chronic exposure to mercury may cause permanent central nervous system damage, fatigue, weight loss, tremors, and personality changes. **Notes to Physician:** Treat symptomatically and supportively. **Antidote:** The use of Dimercaprol or BAL (British Anti-Lewisite) as a chelating agent should be determined by qualified medical personnel. The use of d-Penicillamine as a chelating agent should be determined by qualified medical personnel. See section 2 for further details.
Inhalation	Fatal if inhaled.

5. Fire-fighting measures

5.1. Extinguishing media

Substance is nonflammable; use agent most appropriate to extinguish surrounding fire.

5.2. Special hazards arising from the substance or mixture

Hazardous decomposition: Mercury/mercury oxides.

Do not breathe mist / vapors / spray.

5.3. Advice for fire-fighters

As in any fire, wear a self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent), and full protective gear. Combustion generates toxic fumes.

ERG Guide No. 172

6. Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Put on appropriate personal protective equipment (see section 8).

6.2. Environmental precautions

Do not allow spills to enter drains or waterways.

Use good personal hygiene practices. Wash hands before eating, drinking, smoking or using toilet. Promptly remove soiled clothing and wash thoroughly before reuse.

6.3. Methods and material for containment and cleaning up

Vacuum or sweep up material and place into a suitable disposal container. Wear a self contained breathing apparatus and appropriate personal protection. (See Exposure Controls, Personal Protection section).

7. Handling and storage

7.1. Precautions for safe handling

Wash thoroughly after handling. Remove contaminated clothing and wash before reuse. Use with adequate ventilation. Minimize dust generation and accumulation. Avoid breathing dust, vapor, mist, or gas. Avoid contact with eyes, skin, and clothing. Keep container tightly closed. Avoid ingestion and inhalation.

See section 2 for further details. - [Prevention]:

7.2. Conditions for safe storage, including any incompatibilities

Handle containers carefully to prevent damage and spillage.

Incompatible materials: Acetylene, ammonia, boron phosphodiiodide, chlorine, chlorine dioxide, methyl azide, sodium carbide, halogens, strong oxidizers.

Store in a cool, dry, well-ventilated area away from incompatible substances. Keep away from metals. Poison room locked.

See section 2 for further details. - [Storage]:

7.3. Specific end use(s)

No data available.

8. Exposure controls and personal protection

8.1. Control parameters

Exposure

CAS No.	Ingredient	Source	Value
0007439-97-6	Mercury	OSHA	TWA 0.1 mg/m3
		ACGIH	Alkyl compounds TWA: 0.01 mg/m3 STEL 0.03 mg/m3 Skin Aryl compounds TWA: 0.05 mg/m3 C 0.1 mg/m3 Skin Elemental/Inorganic 0.025mg/m3 Skin
		NIOSH	No Established Limit
		Supplier	No Established Limit

Carcinogen Data

CAS No.	Ingredient	Source	Value
0007439-97-6	Mercury	OSHA	Select Carcinogen: No
		NTP	Known: No; Suspected: No
		IARC	Group 1: No; Group 2a: No; Group 2b: No; Group 3: Yes; Group 4: No;

8.2. Exposure controls

Respiratory	Follow the OSHA respirator regulations found in 29CFR §1910.134 or European Standard EN 149. Always use a NIOSH or European Standard EN 149 approved respirator when necessary.
Eyes	Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166.
Skin	Wear appropriate protective clothing to prevent skin exposure. Wear appropriate gloves to prevent skin exposure.
Engineering Controls	Provide adequate ventilation. Where reasonably practicable this should be achieved by the use of local exhaust ventilation and good general extraction. If these are not sufficient to maintain concentrations of particulates and any vapor below occupational exposure limits suitable respiratory protection must be worn.
Other Work Practices	Use good personal hygiene practices. Wash hands before eating, drinking, smoking or using toilet. Promptly remove soiled clothing and wash thoroughly before reuse.

See section 2 for further details. - [Prevention]:

9. Physical and chemical properties

Appearance	Silver Liquid
Odor	Odorless
Odor threshold	Not Measured
pH	Not Applicable
Melting point / freezing point	-38.87 deg C

Initial boiling point and boiling range	356.5 deg C @ 760.00mmHg
Flash Point	Not Measured
Evaporation rate (Ether = 1)	Not Available
Flammability (solid, gas)	Not Applicable
Upper/lower flammability or explosive limits	**Lower Explosive Limit:** Not Measured **Upper Explosive Limit:** Not Measured
Vapor pressure (Pa)	0.002 mmHg @ 25C
Vapor Density	7 (Air=1)
Specific Gravity	13.5400g/cm3 (Water=1)
Solubility in Water	Insoluble
Partition coefficient n-octanol/water (Log Kow)	Not Measured
Auto-ignition temperature	Not Measured
Decomposition temperature	Not Available
Viscosity (cSt)	1.554 cP 20.00
Molecular Formula	Hg
Molecular Weight	200.59

9.2. Other information

No other relevant information.

10. Stability and reactivity

10.1. Reactivity

Hazardous Polymerization will not occur.

10.2. Chemical stability

Stable under normal circumstances.

10.3. Possibility of hazardous reactions

No data available.

10.4. Conditions to avoid

High temperatures, incompatible materials, metals.

10.5. Incompatible materials

Acetylene, ammonia, boron phosphodiiodide, chlorine, chlorine dioxide, methyl azide, sodium carbide, halogens, strong oxidizers.

10.6. Hazardous decomposition products

Mercury/mercury oxides.

11. Toxicological information

Acute toxicity

Ingredient	Oral LD50, mg/kg	Skin LD50, mg/kg	Inhalation Vapor LC50, mg/L/4hr	Inhalation Dust/Mist LC50, mg/L/4hr	Inhalation Gas LC50, ppm

Mercury - (7439-97-6)	37.00, Rat - Category: 2	No data available	No data available	No data available	No data available

Note: When no route specific LD50 data is available for an acute toxin, the converted acute toxicity point estimate was used in the calculation of the product's ATE (Acute Toxicity Estimate).

Classification	Category	Hazard Description
Acute toxicity (oral)	2	Fatal if swallowed.
Acute toxicity (dermal)	---	Not Applicable
Acute toxicity (inhalation)	2	Fatal if inhaled.
Skin corrosion/irritation	---	Not Applicable
Serious eye damage/irritation	---	Not Applicable
Respiratory sensitization	---	Not Applicable
Skin sensitization	---	Not Applicable
Germ cell mutagenicity	---	Not Applicable
Carcinogenicity	---	Not Applicable
Reproductive toxicity	1B	May damage the unborn child.
STOT-single exposure	---	Not Applicable
STOT-repeated exposure	1	Causes damage to organs through prolonged or repeated exposure.
Aspiration hazard	---	Not Applicable

12. Ecological information

12.1. Toxicity

Very toxic to aquatic life with long lasting effects.

No additional information provided for this product. See Section 3 for chemical specific data.

Aquatic Ecotoxicity

Ingredient	96 hr LC50 fish, mg/l	48 hr EC50 crustacea, mg/l	ErC50 algae, mg/l
Mercury - (7439-97-6)	Not Available	0.0052, Daphnia magna	Not Available

12.2. Persistence and degradability

There is no data available on the preparation itself.

12.3. Bioaccumulative potential

Not Measured

12.4. Mobility in soil

No data available.

12.5. Results of PBT and vPvB assessment

This product contains no PBT/vPvB chemicals.

12.6. Other adverse effects

No data available.

13. Disposal considerations

13.1. Waste treatment methods

Observe all federal, state and local regulations when disposing of this substance.

14. Transport information

	DOT (Domestic Surface Transportation)	IMO / IMDG (Ocean Transportation)	ICAO/IATA
14.1. UN number	UN2809	UN2809	UN2809
14.2. UN proper shipping name	UN2809, Mercury, 8, III	Mercury	Mercury
14.3. Transport hazard class(es)	**DOT Hazard Class:** 8 (6.1)	**IMDG:** 8 **Sub Class:** 6.1	**Air Class:** 8
14.4. Packing group	III	III	III

14.5. Environmental hazards

IMDG	Marine Pollutant: Yes (Mercury)

14.6. Special precautions for user

No further information

15. Regulatory information

Regulatory Overview	The regulatory data in Section 15 is not intended to be all-inclusive, only selected regulations are represented.
Toxic Substance Control Act (TSCA)	All components of this material are either listed or exempt from listing on the TSCA Inventory.
WHMIS Classification	D1A

US EPA Tier II Hazards

Fire: No
Sudden Release of Pressure: No
Reactive: No
Immediate (Acute): Yes
Delayed (Chronic): Yes

EPCRA 311/312 Chemicals and RQs (lbs):

Mercury (1.00)

EPCRA 302 Extremely Hazardous:
To the best of our knowledge, there are no chemicals at levels which require reporting under this statute.

EPCRA 313 Toxic Chemicals:

Mercury

Proposition 65 - Carcinogens (>0.0%):
To the best of our knowledge, there are no chemicals at levels which require reporting under this statute.

Proposition 65 - Developmental Toxins (>0.0%):
Mercury

Proposition 65 - Female Repro Toxins (>0.0%):
To the best of our knowledge, there are no chemicals at levels which require reporting under this statute.

Proposition 65 - Male Repro Toxins (>0.0%):
To the best of our knowledge, there are no chemicals at levels which require reporting under this statute.

New Jersey RTK Substances (>1%):

Mercury

Pennsylvania RTK Substances (>1%):

Mercury

16. Other information

The information and recommendations contained herein are based upon data believed to be correct. However, no guarantee or warranty of any kind, expressed or implied, is made with respect to the information contained herein. We accept no responsibility and disclaim all liability for any harmful effects which may be caused by exposure to our products. Customers/users of this product must comply with all applicable health and safety laws, regulations, and orders.

The full text of the phrases appearing in section 3 is:

H330 Fatal if inhaled.

H360D May damage the unborn child.

H372 Causes damage to organs through prolonged or repeated exposure.

H400 Very toxic to aquatic life.

H410 Very toxic to aquatic life with long lasting effects.

This is the first version in the GHS SDS format. Listings of changes from previous versions in other formats are not applicable.

The information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes. In no way shall WM Mercury Waste Inc. be liable for any claims, losses, or damages of any third party or for lost profits or any special, indirect, incidental, consequential or exemplary damages.

End of Document

SAFETY DATA SHEET

Revision Date 10-Feb-2015 **Revision Number** 1

1. Identification

Product Name **Selenium**

Cat No. : **AC419270000; AC419271000; AC419275000**

Synonyms None

Recommended Use Laboratory chemicals.

Uses advised against No Information available

Details of the supplier of the safety data sheet

Company
Fisher Scientific
One Reagent Lane
Fair Lawn, NJ 07410
Tel: (201) 796-7100

Entity / Business Name
Acros Organics
One Reagent Lane
Fair Lawn, NJ 07410

Emergency Telephone Number
For information **US** call: 001-800-ACROS-01
/ **Europe** call: +32 14 57 52 11
Emergency Number **US:**001-201-796-7100 /
Europe: +32 14 57 52 99
CHEMTREC Tel. No.**US:**001-800-424-9300 /
Europe:001-703-527-3887

2. Hazard(s) identification

Classification

This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Acute oral toxicity	Category 3
Acute Inhalation Toxicity - Dusts and Mists	Category 3
Specific target organ toxicity - (repeated exposure)	Category 2

Label Elements

Signal Word
Danger

Hazard Statements
Toxic if swallowed
Toxic if inhaled
May cause damage to organs through prolonged or repeated exposure

Precautionary Statements
Prevention

Wash face, hands and any exposed skin thoroughly after handling
Do not eat, drink or smoke when using this product
Use only outdoors or in a well-ventilated area
Do not breathe dust/fume/gas/mist/vapors/spray

Response
Get medical attention/advice if you feel unwell

Inhalation
IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
Call a POISON CENTER or doctor/physician

Ingestion
IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician
Rinse mouth

Storage
Store locked up
Store in a well-ventilated place. Keep container tightly closed

Disposal
Dispose of contents/container to an approved waste disposal plant

Hazards not otherwise classified (HNOC)
May cause long lasting harmful effects to aquatic life

3. Composition / information on ingredients

Component	CAS-No	Weight %
Selenium	7782-49-2	> 99.5

4. First-aid measures

Eye Contact	Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes.
Skin Contact	Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes.
Inhalation	Remove from exposure, lie down. Move to fresh air. If breathing is difficult, give oxygen. If not breathing, give artificial respiration. Immediate medical attention is required.
Ingestion	Do not induce vomiting. Never give anything by mouth to an unconscious person. Drink plenty of water. Call a physician immediately. If possible drink milk afterwards.
Most important symptoms/effects	No information available.
Notes to Physician	Treat symptomatically

5. Fire-fighting measures

Suitable Extinguishing Media	Water spray. Carbon dioxide (CO_2). Dry chemical. chemical foam.
Unsuitable Extinguishing Media	No information available
Flash Point	No information available
Method -	No information available
Autoignition Temperature	No information available
Explosion Limits	
Upper	No data available
Lower	No data available
Sensitivity to Mechanical Impact	No information available
Sensitivity to Static Discharge	No information available

Specific Hazards Arising from the Chemical

Vapors may form explosive mixtures with air.

Hazardous Combustion Products
None known

Protective Equipment and Precautions for Firefighters
As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

NFPA

Health	Flammability	Instability	Physical hazards
3	0	0	N/A

6. Accidental release measures

Personal Precautions	Ensure adequate ventilation. Use personal protective equipment.
Environmental Precautions	See Section 12 for additional ecological information. Avoid release to the environment. Collect spillage.
Methods for Containment and Clean Up	Sweep up or vacuum up spillage and collect in suitable container for disposal.

7. Handling and storage

Handling	Avoid contact with skin and eyes. Do not breathe dust. Do not breathe vapors or spray mist. Use only in area provided with appropriate exhaust ventilation.
Storage	Keep in a dry, cool and well-ventilated place. Keep container tightly closed. Keep under nitrogen.

8. Exposure controls / personal protection

Exposure Guidelines

Component	ACGIH TLV	OSHA PEL	NIOSH IDLH
Selenium	TWA: 0.2 mg/m³	(Vacated) TWA: 0.2 mg/m³	IDLH: 1 mg/m³ TWA: 0.2 mg/m³

Component	Quebec	Mexico OEL (TWA)	Ontario TWAEV
Selenium	TWA: 0.2 mg/m³	TWA: 0.2 mg/m³	TWA: 0.2 mg/m³

Legend

ACGIH - American Conference of Governmental Industrial Hygienists
OSHA - Occupational Safety and Health Administration
NIOSH IDLH: The National Institute for Occupational Safety and Health Immediately Dangerous to Life or Health

Engineering Measures	Ensure that eyewash stations and safety showers are close to the workstation location.

Personal Protective Equipment

Eye/face Protection	Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166.
Skin and body protection	Wear appropriate protective gloves and clothing to prevent skin exposure.
Respiratory Protection	A NIOSH/MSHA approved air purifying dust or mist respirator or European Standard EN 149.
Hygiene Measures	Handle in accordance with good industrial hygiene and safety practice.

9. Physical and chemical properties

Physical State	Powder Solid
Appearance	Grey
Odor	No information available
Odor Threshold	No information available
pH	No information available
Melting Point/Range	217 - 222 °C / 422.6 - 431.6 °F
Boiling Point/Range	685 °C / 1265 °F
Flash Point	No information available
Evaporation Rate	No information available
Flammability (solid,gas)	No information available
Flammability or explosive limits	
Upper	No data available
Lower	No data available
Vapor Pressure	1 mmHg @ 345 °C
Vapor Density	No information available
Relative Density	4.810
Solubility	No information available
Partition coefficient; n-octanol/water	No data available
Autoignition Temperature	No information available
Decomposition Temperature	No information available
Viscosity	No information available
Molecular Formula	Se
Molecular Weight	78.96

10. Stability and reactivity

Reactive Hazard	None known, based on information available
Stability	Stable under normal conditions.
Conditions to Avoid	Incompatible products.
Incompatible Materials	Acids, Strong oxidizing agents, Fluorine, oxygen, Metals
Hazardous Decomposition Products	None under normal use conditions
Hazardous Polymerization	Hazardous polymerization does not occur.
Hazardous Reactions	None under normal processing.

11. Toxicological information

Acute Toxicity

Product Information No acute toxicity information is available for this product

Component Information

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation
Selenium	6700 mg/kg (Rat)	Not listed	Not listed

Toxicologically Synergistic Products No information available

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Irritation No information available

Sensitization No information available

Carcinogenicity The table below indicates whether each agency has listed any ingredient as a carcinogen.

Component	CAS-No	IARC	NTP	ACGIH	OSHA	Mexico
Selenium	7782-49-2	Not listed	Not listed	Not listed	Not listed	Not listed

Mutagenic Effects	No information available
Reproductive Effects	No information available.
Developmental Effects	No information available.
Teratogenicity	No information available.
STOT - single exposure	None known
STOT - repeated exposure	None known
Aspiration hazard	No information available
Symptoms / effects,both acute and delayed	No information available
Endocrine Disruptor Information	No information available
Other Adverse Effects	The toxicological properties have not been fully investigated.

12. Ecological information

Ecotoxicity
Do not empty into drains.

Persistence and Degradability	No information available
Bioaccumulation/ Accumulation	No information available.
Mobility	No information available.

13. Disposal considerations

Waste Disposal Methods	Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. Chemical waste generators must also consult local, regional, and national hazardous waste regulations to ensure complete and accurate classification.

14. Transport information

DOT	
UN-No	UN3283
Hazard Class	6.1
Packing Group	III
TDG	
UN-No	UN3283
Hazard Class	6.1
Packing Group	III
IATA	
UN-No	3283
Proper Shipping Name	SELENIUM COMPOUND, SOLID, N.O.S.
Hazard Class	6.1
Packing Group	III
IMDG/IMO	
UN-No	3283
Proper Shipping Name	SELENIUM COMPOUND, SOLID, N.O.S.
Hazard Class	6.1
Packing Group	III

15. Regulatory information

International Inventories

Component	TSCA	DSL	NDSL	EINECS	ELINCS	NLP	PICCS	ENCS	AICS	IECSC	KECL
Selenium	X	X	-	231-957-4	-		X	-	X	X	X

Legend:
X - Listed
E - Indicates a substance that is the subject of a Section 5(e) Consent order under TSCA.
F - Indicates a substance that is the subject of a Section 5(f) Rule under TSCA.
N - Indicates a polymeric substance containing no free-radical initiator in its inventory name but is considered to cover the designated polymer made with any free-radical initiator regardless of the amount used.
P - Indicates a commenced PMN substance
R - Indicates a substance that is the subject of a Section 6 risk management rule under TSCA.
S - Indicates a substance that is identified in a proposed or final Significant New Use Rule
T - Indicates a substance that is the subject of a Section 4 test rule under TSCA.
XU - Indicates a substance exempt from reporting under the Inventory Update Rule, i.e. Partial Updating of the TSCA Inventory Data Base Production and Site Reports (40 CFR 710(B).
Y1 - Indicates an exempt polymer that has a number-average molecular weight of 1,000 or greater.
Y2 - Indicates an exempt polymer that is a polyester and is made only from reactants included in a specified list of low concern reactants that comprises one of the eligibility criteria for the exemption rule.

U.S. Federal Regulations

TSCA 12(b) Not applicable

SARA 313

Component	CAS-No	Weight %	SARA 313 - Threshold Values %
Selenium	7782-49-2	> 99.5	1.0

SARA 311/312 Hazardous Categorization

Acute Health Hazard	Yes
Chronic Health Hazard	Yes
Fire Hazard	No
Sudden Release of Pressure Hazard	No
Reactive Hazard	No

Clean Water Act

Component	CWA - Hazardous Substances	CWA - Reportable Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants
Selenium	-	-	X	X

Clean Air Act Not applicable

Component	HAPS Data	Class 1 Ozone Depletors	Class 2 Ozone Depletors
Selenium	X		-

OSHA Occupational Safety and Health Administration
Not applicable

CERCLA
This material, as supplied, contains one or more substances regulated as a hazardous substance under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302)

Component	Hazardous Substances RQs	CERCLA EHS RQs
Selenium	100 lb	-

California Proposition 65 This product does not contain any Proposition 65 chemicals

State Right-to-Know

Component	Massachusetts	New Jersey	Pennsylvania	Illinois	Rhode Island
Selenium	X	X	X	X	X

U.S. Department of Transportation

Reportable Quantity (RQ):	N
DOT Marine Pollutant	N
DOT Severe Marine Pollutant	N

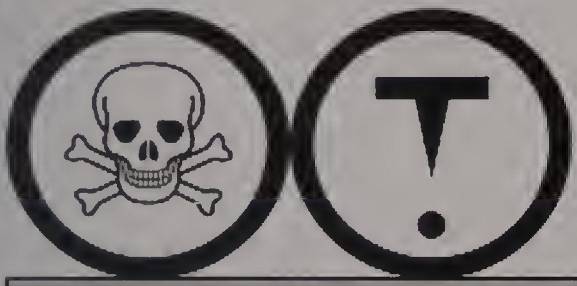
U.S. Department of Homeland Security
This product does not contain any DHS chemicals.

Other International Regulations

Mexico - Grade	No information available

Canada
This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all the information required by the CPR

WHMIS Hazard Class	D1A Very toxic materials D2B Toxic materials



16. Other information

Prepared By	Regulatory Affairs Thermo Fisher Scientific Email: EMSDS.RA@thermofisher.com
Revision Date	10-Feb-2015
Print Date	10-Feb-2015
Revision Summary	This document has been updated to comply with the US OSHA HazCom 2012 Standard replacing the current legislation under 29 CFR 1910.1200 to align with the Globally Harmonized System of Classification and Labeling of Chemicals (GHS)

Disclaimer
The information provided on this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guide for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered as a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other material or in any process, unless specified in the text.

End of SDS

Teck

SILVER METAL
SAFETY DATA SHEET

SECTION 1. IDENTIFICATION

Product Identity: Silver Metal.

Trade Names and Synonyms: Argentum; TADANAC® Silver; C.I. 77820.

Manufacturer:
Teck Metals Ltd.
Trail Operations
Trail, British Columbia
V1R 4L8
Emergency Telephone: 250-364-4214

Supplier:
In U.S.:
Teck American Metal Sales
Incorporated
501 North Riverpoint Blvd, Suite 300
Spokane, WA
USA, 99202

Other than U.S.:
Teck Metals Ltd.
#1700 – 11 King Street West
Toronto, Ontario
M5H 4C7

Preparer:
Teck Metals Ltd.
Suite 3300 – 550 Burrard Street
Vancouver, British Columbia
V6C 0B3

Date of Last Review: July 20, 2015.

Date of Last Edit: July 20, 2015.

Product Use: Silver is used in the manufacture of photographic film, coins, electronics, tableware, mirrors, jewelry, ornaments, special batteries and vessels and equipment used to manufacture medicinal chemicals, process foods and beverages, and handle organic acids; for electroplating; as a catalyst in hydrogenation and oxidation processes, and as an ingredient in dental alloys.

SECTION 2. HAZARDS IDENTIFICATION

CLASSIFICATION:

NOTE: In the form in which it is sold this product is not regulated as a Hazardous Product in the U.S. or Canada. This Safety Data Sheet is provided for information purposes only.

Health		Physical	Environmental
Acute Toxicity (Oral, Inhalation)	– Does not meet criteria	Does not meet criteria for any Physical Hazard	**Aquatic Toxicity – Long Term (Chronic) Category 4**
Skin Corrosion/Irritation	– Does not meet criteria		
Eye Damage/Eye Irritation	– Does not meet criteria		
Respiratory or Skin Sensitization	– Does not meet criteria		
Mutagenicity	– Does not meet criteria		
Carcinogenicity	– Does not meet criteria		
Reproductive Toxicity	– Does not meet criteria		
Specific Target Organ Toxicity:			
Acute Exposure	– Does not meet criteria		
Chronic Exposure	– Does not meet criteria		

LABEL:

Symbols: *None Required*	**Signal Word:** *None Required*
Hazard Statements	**Precautionary Statements:**
May cause long lasting harmful effects to aquatic life.	Avoid release to the environment.

Emergency Overview: A lustrous white metal that does not burn in bulk but may form a weak explosive mixture if dispersed in air as a fine powder. This product is relatively non-toxic and poses little immediate hazard to the health of emergency response personnel or to the environment in an emergency situation.

Potential Health Effects: Metallic silver is relatively non-toxic to humans. This product may cause mild local irritation to eyes, nose, throat and upper airways, particularly if the product is heated to the point of fuming. Prolonged exposure to silver dust may cause a bluish or grayish pigmentation to the skin, eyes and mucous membranes. Silver is not listed as a carcinogen by OSHA, NTP, IARC, ACGIH or the EU (see Toxicological Information, Section 11).

Potential Environmental Effects: In the form in which this product is sold, it has low bioavailability and does not pose any significant environmental risks. Releases of the product to water and soil should, nevertheless, be prevented (see Ecological Information, Section 12).

SECTION 3. COMPOSITION / INFORMATION ON INGREDIENTS

COMPONENT	CAS Registry No.	CONCENTRATION (% wgt/wgt)
Silver	7440-22-4	99.99%

Note: See Section 8 for Occupational Exposure Guidelines.

SECTION 4. FIRST AID MEASURES

Eye Contact: *Symptoms:* Mild irritation, redness. Do not allow victim to rub eye(s). Let the eye(s) water naturally for a few minutes. If particle/dust does not dislodge, flush with lukewarm, gently flowing water for 5 minutes or until particle/dust is removed, while holding eyelid(s) open. If irritation persists, obtain medical attention. DO NOT attempt to manually remove anything stuck to the eye.

Skin Contact: *Symptoms:* Soiling of skin. Dust: No health effects expected. If irritation does occur, wash with lukewarm, gently flowing water and mild soap for 5 minutes or until the product is removed. If skin irritation persists or if you feel unwell, obtain medical advice. Molten Metal: Flush contact area to solidify and cool but do not attempt to remove encrusted material or clothing. Cover burns and seek medical attention immediately.

Inhalation: *Symptoms:* Coughing and irritation in heavy dust clouds. If symptoms are experienced remove source of contamination or move victim to fresh air. Get medical advice/attention if you feel unwell or are concerned.

Ingestion: *Symptoms:* Stomach upset, nausea, vomiting. If swallowed, no specific intervention is indicated as this material is not likely to be hazardous by ingestion. However, if irritation or discomfort occurs, obtain medical advice.

SECTION 5. FIRE FIGHTING MEASURES

Fire and Explosion Hazards: Massive metal is difficult to ignite and is not considered a serious fire hazard. Finely-divided silver metal dust or powder may form weakly explosive dust clouds when dispersed in the air at high concentrations and exposed to heat, flame, or other sources of ignition. Explosions may also occur upon contact with certain incompatible materials (see Stability and Reactivity, Section 10).

Extinguishing Media: Use any means of extinction appropriate for surrounding fire conditions such as water spray, carbon dioxide, dry chemical, or foam. Do not use direct water streams on fires where molten metal is present.

Fire Fighting: Fire fighters should be fully trained and wear full protective clothing including an approved, self-contained breathing apparatus which supplies a positive air pressure within a full face-piece mask.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Procedures for Cleanup: Control source of spillage if possible to do so safely. Clean up spilled material immediately, observing precautions in Section 8, Personal Protection. Molten metal should be allowed to cool and harden before cleanup. Once solidified wear gloves, pick up and return to process. Powder or dust should be cleaned up by carefully sweeping. Return uncontaminated spilled material to the process if possible. Place contaminated material in clean, dry, suitably labelled containers for later recovery in view of the economic value of silver. Treat or dispose of waste material in accordance with all local, regional, and national requirements.

Personal Precautions: Protective clothing, gloves, and a respirator are recommended for persons responding to an accidental release, especially of molten silver metal. Close-fitting safety goggles may be necessary in some circumstances to prevent eye contact with dust or fume. Where molten metal is involved, heat-resistant gloves and suitable clothing for protection from hot-metal splash should be worn.

Environmental Precautions: Silver metal has relatively low bioavailability and is not considered to pose immediate ecological risks. However, good management practices should always be applied in the storage and use of silver and its compounds. Releases of the product to water and soil should be prevented.

SECTION 7. HANDLING AND STORAGE

Store silver in a secure, covered area away from incompatible materials. Solid metal suspected of containing moisture should be THOROUGHLY DRIED before being added to a molten bath. Otherwise, entrained moisture could expand explosively and spatter molten metal out of the bath.

SECTION 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Occupational Exposure Guidelines: *(Time-Weighted Average (TWA) concentration over 8 hr unless otherwise indicated)*

Component	**ACGIH TLV**	**OSHA PEL**	**NIOSH REL**
Silver	0.1 mg/m^3	0.01 mg/m^3	0.01 mg/m^3

NOTE: OEGs for individual jurisdictions may differ from those given above. Check with local authorities for the applicable OEGs in your jurisdiction.
ACGIH - American Conference of Governmental Industrial Hygienists; OSHA - Occupational Safety and Health Administration; NIOSH - National Institute for Occupational Safety and Health. TLV – Threshold Limit Value, PEL – Permissible Exposure Limit, REL – Recommended Exposure Limit.

NOTE: The selection of the necessary level of engineering controls and personal protective equipment will vary depending upon the conditions of use and the potential for exposure. The following are therefore only general guidelines that may not fit all circumstances. Control measures to consider include:

Ventilation: Use adequate local or general ventilation to maintain the concentration of silver fumes in the working environment well below recommended occupational exposure limits. Supply sufficient replacement air to make up for air removed by the exhaust system. Local exhaust is recommended for melting, casting, grinding and polishing, etching, or use of powders.

Protective Clothing: Gloves and coveralls or other work clothing are recommended to prevent prolonged or repeated direct skin contact when silver is processed. Appropriate eye protection should be worn where fume or dust is generated. Where hot or molten metal is handled, heat-resistant gloves, goggles or face-shield, and clothing to protect from hot metal splash should be worn. Safety type boots are recommended.

Respirators: Where silver dust or fumes are generated and cannot be controlled to within acceptable levels by engineering means, use appropriate NIOSH-approved respiratory protection equipment (a 42CFR84 Class N, R or P-95 particulate filter cartridge or better).

General Hygiene Considerations: Always practice good personal hygiene. Refrain from eating, drinking, or smoking in work areas. Thoroughly wash hands before eating, drinking, or smoking in appropriate, designated areas. No special packaging materials are required.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance: Ductile lustrous white metal	**Odour:** None	**Odour Threshold:** None	**pH:** Not Applicable
Vapour Pressure: Negligible @ 20°C	**Vapour Density:** Not Applicable	**Melting Point/Range:** 961°C	**Boiling Point/Range:** 2212°C
Relative Density (Water = 1): 10.49	**Evaporation Rate:** Not Applicable	**Coefficient of Water/Oil Distribution:** Not Applicable	**Solubility:** Insoluble in water
Flash Point: None	**Flammable Limits** (LEL/UEL): Not Applicable.	**Auto-ignition Temperature:** Not Applicable.	**Decomposition Temperature:** Not Applicable.

SECTION 10. STABILITY AND REACTIVITY

Stability & Reactivity: Massive metal is stable and not considered reactive under normal temperatures and pressures. Hazardous polymerization or runaway reactions will not occur. Ozone, sulphur, and hydrogen sulphide blacken silver. Most silver salts are light sensitive.

Incompatibilities: Silver reacts with acetylene, acetylene compounds and ammonia to form explosive and shock sensitive compounds. Contact with strong hydrogen peroxide solutions will cause violent decomposition of the peroxide, releasing oxygen

gas and increasing the fire and explosion potential. Silver is incompatible with bromine azide, chlorine trifluoride, ethyleneimine, oxalic and tartaric acids and with nitric acid in the presence of ethanol.

Hazardous Decomposition Products: High temperature operations such as oxy-acetylene cutting, electric arc welding or overheating a molten bath will generate silver oxide fume. The particle size of metal fumes is largely within the respirable size range, which increases the likelihood of inhalation and deposition of the fume within the body.

SECTION 11. TOXICOLOGICAL INFORMATION

General: Solid silver presents few health hazards. Repeated long-term exposure to silver dust can cause permanent blue-grey staining of eyes, nose, mouth, throat, and skin.

Acute:
Skin/Eye: Direct contact may cause mild local skin or eye irritation. There have been limited reports of allergic contact dermatitis following exposure to powdered silver, silver solutions, and dental amalgams.

Inhalation: Inhalation of silver fume or dust may be irritating to mucous membranes and the upper respiratory tract. Extremely high exposures to silver oxide fume have caused lung damage with pulmonary edema.

Ingestion: Ingestion of silver compounds may cause irritation of the stomach. However, ingestion is not a typical route of occupational exposure.

Chronic:
Prolonged exposure to silver dust may cause a bluish or greyish pigmentation to the skin, eyes and mucous membranes. This occurs slowly and may take years to develop. Once present, it does not go away and, in the most severe cases, may be quite disfiguring but is not considered to be a toxic effect. Silver is not listed as a human carcinogen by the Occupational Safety and Health Administration (OSHA), the National Toxicology Program (NTP), the International Agency for Research on Cancer (IARC), the American Conference of Governmental Industrial Hygienists (ACGIH) or the European Union (EU).

Animal Toxicity:

Ingredient:	Acute Oral Toxicity:	Acute Dermal Toxicity:	Acute Inhalation Toxicity:
Silver	>5,000 mg/kg†	>2,000 mg/kg*	>5.16 mg/m^3‡

† LD_{50}, Rat,Oral, * LD_{50}, Rat, Dermal ‡ LC_{50}, Rat, Inhalation, 4 hour

SECTION 12. ECOLOGICAL INFORMATION

Silver metal is relatively insoluble, and therefore poses minimal ecological risks. However, its processing, use or extended exposure in aquatic and terrestrial environments may result in conversion of the metal to more bioavailable forms. In particular, silver compounds can be highly toxic to aquatic organisms.

SECTION 13. DISPOSAL CONSIDERATIONS

In view of the economic value of silver metal, every effort should be made to recover and reuse all spilled material. If material cannot be returned to process or recovered for its economic value, dispose of only in accordance with applicable regulations.

SECTION 14. TRANSPORT INFORMATION

No special shipping or transportation requirements.

SECTION 15. REGULATORY INFORMATION

U.S.
Listed on TSCA Inventory.. Yes

Hazardous Under Hazard Communication Standard .... No

CERCLA Section 103 Hazardous Substance.. Yes ....RQ 1,000lbs. (454 kg.)*
*reporting not required if the diameter of the metal pieces released is equal to or exceeds 100 micrometers (0.004 inches)

EPCRA Section 302 Extremely Hazardous Substance........................... No

EPCRA Section 311/312 Hazard Categories .... No Hazard Categories Apply

EPCRA Section 313 Toxic Release Inventory:... Silver - CAS Number 7440-22-4
Percent by Weight 99.99%

SECTION 16. OTHER INFORMATION

Date of Original Issue:	December 3, 1998	**Version:**	01 *(First edition)*
Date of Latest Revision:	July 20, 2015	**Version:**	13

The information in this Safety Data Sheet is based on the following references:

- American Conference of Governmental Industrial Hygienists, 2004, Documentation of the Threshold Limit Values and Biological Indices, 7th Edition plus updates.
- American Conference of Governmental Industrial Hygienists, Guide to Occupational Exposure Values - 2015.
- American Conference of Governmental Industrial Hygienists, 2015, Threshold Limit Values for Chemical Substances and Physical Agents and Biological Exposure Indices.
- Bretherick's Handbook of Reactive Chemical Hazards, 20th Anniversary Edition. (P. G. Urben Ed.) 1995.
- Canadian Centre for Occupational Health and Safety (CCOHS) CHEMINFO Chemical Substance Data Base.
- Commission de la santé et la sécurité du travail, Service du Répertoire toxicologique, – Argent Métal.
- European Regulation (EC) No 1272/2008 on classification, labelling and packaging of substances and mixtures, amending and repealing directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006 (REACH).
- Health Canada, SOR/2015-17, Hazardous Products Regulations, 30 January 2015.
- Merck & Co., Inc., 2001, The Merck Index, An Encyclopedia of Chemicals, Drugs, and Biologicals, 13th Edition.
- National Library of Medicine, National Toxicology Information Program, Hazardous Substance Data Bank (on-line version).
- Patty's Toxicology, 5th Edition, 2001: E. Bingham, B. Cohrssen & C.H. Powell, Ed.
- U.S. Dept. of Health and Human Services, National Institute for Occupational Safety and Health, NIOSH Pocket Guide to Chemical Hazards (on-line version).
- U.S. EPA, Prevention, Pesticides, & Toxic Substances, Reregistration Eligibility Decision (RED) for Silver, Revised July 1993.
- U.S. Occupational Safety and Health Administration, 1989, Code of Federal Regulations, Title 29, Part 1910.

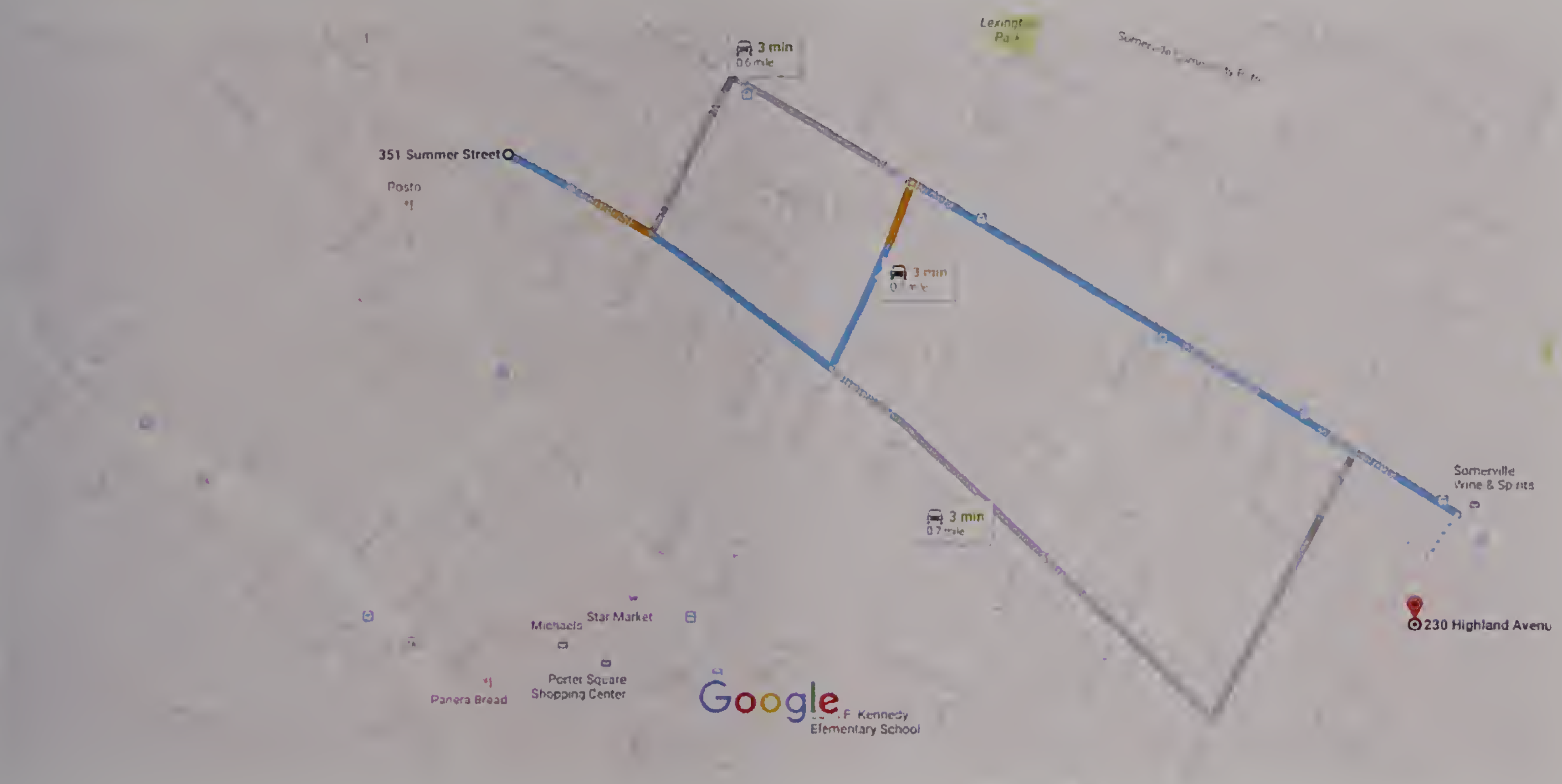
Notice to Reader

Although reasonable precautions have been taken in the preparation of the data contained herein, it is offered solely for your information, consideration and investigation. Teck American Metal Sales Incorporated and Teck Metals Ltd. extend no warranty and assume no responsibility for the accuracy of the content and expressly disclaim all liability for reliance thereon. This safety data sheet provides guidelines for the safe handling and processing of this product; it does not and cannot advise on all possible situations. Therefore, your specific use of this product should be evaluated to determine if additional precautions are required. Individuals exposed to this product should read and understand this information and be provided pertinent training prior to working with this product.

APPENDIX G

DIRECTIONS TO NEAREST HOSPITAL

Google Maps 351 Summer Street, Somerville, MA 02144 to 230 Highland Avenue, Somerville, MA 02143 Drive 0.7 mile, 3 min



Map data ©2016 Google 200 ft

Directions from 351 Summer Street to 230 Highland Avenue, Somerville, MA:
3 min (0.7 mile) via Summer St and Highland Ave

Turn Left out of Site (Summer Street - One Way to East)
Head southeast on Summer Street toward Elston Street - 0.2 mi

Turn left onto Hancock Street - 0.1 mi

Turn right onto Highland Avenue - 0.3 mi

230 Highland Avenue
Somerville, MA 02143

APPENDIX H

JOB SAFETY ANAYSES

JOB SAFETY ANALYSIS

EnviroTrac
Environmental Services

Task: Ground Water Sampling, including gauging and purging wells

Date of Hazard Assessment:

Date of revision: 1/12/15

Person(s) conducting Hazard Assessment: Michael Clark, Dir H&S

Joseph Rennie Lenny Darmiento

REQUIRED (use an "X") **& RECOMMENDED** (use an "&") PERSONAL EQUIPMENT		
Standard PPE: _x_ Hardhat _x_ Safety Glasses _x_ Safety Boots _x_ Hi-Visibility Apparel or Hi-Vis Safety Vest	**Gloves:** _x_ Chemical resistant (circle below) [✓ Nitrile] Butyl Rubber Neoprene _x_ Work gloves __ Kevlar gloves __ Gauntlets required on gloves	**Task Related PPE:** __ Full Face Shield / Goggles __ Dust Mask __ Respirator __ Flame Retardant Clothing __ Other:
TOOLS AND EQUIPMENT		
Oil/water interface probe (tested before leaving office), hand tools to open well cover, sampling equipment that includes: glass sample vials, Horiba analyzer, etc.		

Procedural Step / Activity List the tasks required to perform the activity in the sequence they are carried out.	**Hazard** Against each task list the hazards that could cause injury when the task is performed.	**Hazard Rating** (1-3) lower number = higher risk*	**Contingencies/Control Measures** List the control measures required to eliminate or minimize the risk of injury arising from the identified hazard.
Prepare work area, unload equipment and supplies	Physical hazards of work area.	1	Control traffic, set up and establish Work Zone Protection; coordinate simultaneous operations (SIMOPS); identify and control site hazards: weather, terrain, biologicals, lighting, etc.
	Slip/Trip/Fall	2	1) Review path of travel. Clear trip hazards, if possible, otherwise avoid. 2) Inspect/be aware of wet, icy, or slippery conditions. Apply sand, salt, dirt, or other abrasive material at alleviate hazard, otherwise focus on conditions and watch step/balance. 3) Identify and avoid overhead hazards.
	Lifting hazards	2	1) Use proper lifting and manual techniques: lift, push, pull with legs, use proper body form, keep loads close, move feet - do not twist. 2) Get help (other person/mechanical) when lifting >50lbs. 3) Wear work gloves when handling materials or using tools.
Open/Close well manways	Strains and cuts from opening / closing wells	3	1) Inspect tools prior to use. Ensure proper working conditions. 2) Keep hands clear when using tool to open well cover. 3) Use proper lifting techniques for well covers. 4) Use proper tools for job. 5) Protect knees, if kneeling for long periods.
Gauging Monitoring Wells	Struck by vehicle	3	1) Work within established Work Zone Protection. 2) Wear high visibility apparel, safety vests, hardhat, etc. 3) Use buddy system, if more than one person
	Exposure to Hazardous Substances.	2	1) Roll up tape slowly to alleviate potential from splashing. 2) Stand up wind while at well. 3) Always wear safety glasses with side shields 4) Verify sufficient quantities of PPE on-site to protect against exposure including safety glasses, nitrile gloves.

* Hazard Rating: 1-Potential for fatality; 2-Potential for severe injury, acute illness; 3-Potential for injury, irritation, chronic illness

Focus On Task, Think before you act, Remember - Safety First!!!

JOB SAFETY ANALYSIS

EnviroTrac
Environmental Services

Task: Ground Water Sampling, including gauging and purging wells

Procedural Step / Activity List the tasks required to perform the activity in the sequence they are carried out.	**Hazard** Against each task list the hazards that could cause injury when the task is performed.	**Hazard Rating** (1-3) lower number = higher risk*	**Contingencies/Control Measures** List the control measures required to eliminate or minimize the risk of injury arising from the identified hazard.
			5) Wash hands and face after working with or potential exposure to chemicals and before eating or drinking.
	Slip/Trip/Fall		1) Keep work area organized (good housekeeping) and reduce trip hazards from equipment, supplies, and materials. 2) Watch water around site. If cold, watch for ice.
Purging Monitoring Wells	Injuries (hand, muscle strain, eye)	2	1) Use proper PPE (nitrile gloves/eye protection). 2) Use proper lifting techniques when bailing and when lifting/carrying buckets of purge water. 3) Do not overfill buckets. 4) Use pump to purge well, if large volume of water.
	Explosion / flash	3	If product or a hazardous atmosphere is anticipated, measure well for Lower Explosion Limit (LEL) and Upper Explosion Limit (UEL), also measure oxygen content associated with the UEL; or use intrinsically safe equipment.
Sample wells and pack samples for shipment	Exposure to Hazardous Substances	3	1) Wear proper PPE (safety glasses, nitrile gloves, etc.) 2). Stand with wind at your back to prevent wind splash.
	Injuries (hand, cuts, back, strain)	3	1) Glass vial have been known to break. Examine bottles for cracks. Take precautions, when picking up broken glass. 2) Wear chemical resistant gloves when handling purge water or samples. 3) Use proper lifting techniques when lifting sampling cooler, use buddy system or use dolly, if over 50 lbs..
USE SPACE BELOW FOR ADDITIONAL SITE SPECIFIC RISKS AND CONDITIONS NOT COVERED ABOVE			

Add additional sheets, if necessary

* Hazard Rating: 1-Potential for fatality; 2-Potential for severe injury, acute illness; 3-Potential for injury, irritation, chronic illness

EnviroTrac
Environmental Services

JOB SAFETY ANALYSIS

Task: Oversight of drilling, well installation, and soil boring
(attach and review copy of drillers JSA for activities on-site

Project:

Date of Hazard Assessment:

Date of revision:

Person(s) conducting Hazard Assessment

Procedural Step / Activity List the tasks required to perform the activity in the sequence they are carried out.	**Hazard** Against each task list the hazards that could cause injury when the task is performed.	**Contingencies/Control Measures** List the control measures required to eliminate or minimize the risk of injury arising from the identified hazard.
Mobilization to and from site	Driving accidents	1) Verify vehicle operating condition against pre-trip check list. 2) Use defensive driving techniques (Smith System Driving Keys), avoid backing or back with caution, wear seatbelt. 3) Be aware of weather conditions and adjust driving accordingly. 4) Do not use cell phone or Nextel Direct Connect during driving, minimize other distractions, be aware of fatigue. 5) Ensure all tools, equipment, materials, supplies, containers, and personal effects are secure and stowed for transportation.
	Criminal Activity	1) Lock vehicle when unattended 2) Attempt to park vehicle in secure location
Biohazards (Be aware during ALL site tasks)	Animal Droppings	Do not touch, sweep, or disturb w/o proper cleaning procedure and proper PPE.
	Mosquitoes, wasps, ticks, spiders (poisonous and biting), other biting insects	Use insect repellent on clothes, exposed skin, wear appropriate gloves, and if necessary, insect mesh netting designed to be used with a hard hat, and taped down to the shirt. If bitten, track progress of healing and seek medical attention, as appropriate.
	Poisonous Plants	Be aware of season and be able to recognize poisonous plants to avoid. Wearing long sleeves and long pants as appropriate. If contact,
	Indigenous Animals	Be aware of environment and the wildlife found there, when walking though brush, be as loud as possible as a warning and to not startle any animals. Watch for: snakes, rodents, dogs/cats, bears, etc.
	Hypodermic Needles	Do not touch nor try to remove needles. Call supervisor for direction.
Site Walkover	Traffic	1) Wear High Visibility Apparel – safety vests, etc. 2) Be aware of traffic patterns and other activities/work being conducted at site 3) Use buddy system, if more than one person
	Slip/Trip/Fall	1) Inspect/be aware of ground conditions and wet, icy, or slippery conditions 2) Clear trip hazards, when possible
Set Up Traffic Control (as applicable)	Traffic (vehicle/pedestrian)	1) Wear proper PPE (High Visibility Apparel, i.e., safety vests) 2) Be aware of traffic patterns / other activities/work being conducted at site 3) Use buddy system, if more than one person 4) Make sure control devices do not force pedestrians into vehicle traffic (or vice versa)

JOB SAFETY ANALYSIS

Task: Oversight of drilling, well installation, and soil boring
(attach and review copy of drillers JSA for activities on-site

Procedural Step / Activity List the tasks required to perform the activity in the sequence they are carried out.	**Hazard** Against each task list the hazards that could cause injury when the task is performed.	**Contingencies/Control Measures** List the control measures required to eliminate or minimize the risk of injury arising from the identified hazard.
	Slip/Trip/Fall	1) Inspect/be aware of ground conditions and wet, icy, or slippery conditions 2) Clear hazards, if possible
	Injuries (hand/back)	1) Wear proper hand protection 2) Use proper lifting techniques/ use assistance for lifts > 50 lbs
Oversite During Borehole Clearing (hand methods, air knife, vactron)	Heavy Equipment Use	1) Be aware of proximity to vacuum extractor truck 2) Air compressor used for air knife – be aware of proximity
	Slip/Trip/Fall	1) Inspect/be aware of ground and flooring and wet, icy, or slippery conditions 2) Watch hoses, bore holes, and cuttings as trip hazards
	Physical hazards	1) Material extracted may be contaminated, use proper PPE 2) Injury to head possible, wear hardhat 3) Be aware of noise levels, wear hearing protection as required
Oversite During Drilling, Soil Boring Activities	Heavy Equipment Use	1) Be aware of proximity to drill rig or GeoProbe 2) Do not stand where you can get caught on or pulled into rotating equipment 3) Follow directions of equipment operator
	Electrical Hazards	1) Be aware of proximity to overhead lines follow minimum safe approach distances 2) If underground utility is contacted, equipment may become energized
	Hazardous Weather Conditions	1) Wear sunscreen and/or protective clothing when working in intense sunlight 2) Wear proper clothing to avoid heat/cold stress 3) Drink plenty of fluids to avoid dehydration 4) Be aware of possibility of lightning (if applicable institute Lightning Safety Plan)
	Physical hazards	1) Material extracted may be contaminated, use proper PPE 2) Injury to head possible, wear hardhat 3) Be aware of noise levels, wear hearing protection as required
USE SPACE BELOW FOR ADDITIONAL SITE SPECIFIC RISKS AND CONDITIONS NOT COVERED ABOVE		

Add additional sheets, if necessary

EnviroTrac
Environmental Services

JOB SAFETY ANALYSIS

Task: Trenching/Soil Excavation

Project:

Date of Hazard Assessment:

Date of revision:

Person(s) conducting Hazard Assessment:

Procedural Step / Activity List the tasks required to perform the activity in the sequence they are carried out.	**Hazard** Against each task list the hazards that could cause injury when the task is performed.	**Contingencies/Control Measures** List the control measures required to eliminate or minimize the risk of injury arising from the identified hazard.
Mobilization to and from site	Driving accidents	1) Verify vehicle operating condition against pre-trip check list. 2) Use defensive driving techniques (Smith System Driving Keys), avoid backing or back with caution, wear seatbelt. 3) Be aware of weather conditions and adjust driving accordingly. 4) Do not use cell phone or Nextel Direct Connect during driving, minimize other distractions, be aware of fatigue. 5) Ensure all tools, equipment, materials, supplies, containers, and personal effects are secure and stowed for transportation.
	Criminal Activity	1) Lock vehicle when unattended 2) Attempt to park vehicle in secure location
Biohazards (Be aware during ALL site tasks)	Animal Droppings	Do not touch, sweep, or disturb w/o proper cleaning procedure and proper PPE.
	Mosquitoes, wasps, ticks, spiders (poisonous and biting), other biting insects	Use insect repellent on clothes, exposed skin, wear appropriate gloves, and if necessary, insect mesh netting designed to be used with a hard hat, and taped down to the shirt. If bitten, track progress of healing and seek medical attention, as appropriate.
	Poisonous Plants	Be aware of season and be able to recognize poisonous plants to avoid. Wearing long sleeves and long pants as appropriate. If contact,
	Indigenous Animals	Be aware of environment and the wildlife found there, when walking though brush, be as loud as possible as a warning and to not startle any animals. Watch for: snakes, rodents, dogs/cats, bears, etc.
	Hypodermic Needles	Do not touch nor try to remove needles. Call supervisor for direction.
Site Walkover	Traffic	1) Wear High Visibility Apparel – safety vests, etc. 2) Be aware of traffic patterns and other activities/work being conducted at site 3) Use buddy system, if more than one person
	Slip/Trip/Fall	1) Inspect/be aware of ground conditions and wet, icy, or slippery conditions 2) Clear trip hazards, when possible
Set Up Traffic Control (as applicable)	Traffic (vehicle/pedestrian)	1) Wear proper PPE (High Visibility Apparel, i.e., safety vests) 2) Be aware of traffic patterns / other activities/work being conducted at site 3) Use buddy system, if more than one person 4) Make sure control devices do not force pedestrians into vehicle traffic (or vice versa)

JOB SAFETY ANALYSIS

Task: Trenching/Soil Excavation

Procedural Step / Activity List the tasks required to perform the activity in the sequence they are carried out.	**Hazard** Against each task list the hazards that could cause injury when the task is performed.	**Contingencies/Control Measures** List the control measures required to eliminate or minimize the risk of injury arising from the identified hazard.
	Slip/Trip/Fall	1) Inspect/be aware of ground conditions and wet, icy, or slippery conditions 2) Clear hazards, if possible
	Injuries (hand/back)	1) Wear proper hand protection 2) Use proper lifting techniques/ use assistance for lifts > 50 lbs
Set Up Work Site	Work zone protection	1) Make sure work zone is properly blocked off using a fence or barricades
	Overhead Power Lines	1) Look overhead prior to moving machines 2) Machines must be 12' from overhead lines.
	Underground Services	1) Underground services are to be located prior to breaking ground. 2) Check for unstable ground
	Injury by moving machinery	1) Heavy equipment should be equipped with a back up alarm 2) Make sure you are seen- make eye contact, buddy system
Concrete/Asphalt removal	Injuries (ears, eyes)	1) Use proper PPE- eye and ear protection.
Soil Excavation	Trench/Excavation Inspection	1) Inspect all open trenching daily 2) Ensure that surcharge is located the proper distance from toe to slopes 3) Look for tension cracks along slopes 4) Ensure that slopes are cut at the design angle of repose 5) Note any water seepage in the trench walls or trench bottom 6) Install a bracing system in accordance with design 7) Note any evidence of shrinkage cracks in trench walls 8) Note any evidence of caving or sloughing of soil since last field inspection 9) Note any zones of unusually weak soil 10) Note any evidence of fracture planes in soil or rock 11) Note any dramatic dips in bedrock 12) Follow shoring plan
		1) Competent person is to inspect excavation and trenching and fill out the "Daily Trenching & Excavation Report".
	Soil Removal	1) stockpile soil on a under plastic, ensure that stockpile is an appropriate distance away from the edge of excavation/trench, be aware of falling debris, do not stand under or near bucket of excavator.

JOB SAFETY ANALYSIS

EnviroTrac
Environmental Services

Task: Trenching/Soil Excavation

Procedural Step / Activity List the tasks required to perform the activity in the sequence they are carried out.	**Hazard** Against each task list the hazards that could cause injury when the task is performed.	**Contingencies/Control Measures** List the control measures required to eliminate or minimize the risk of injury arising from the identified hazard.
Soil Excavation	Faulty or inappropriate equipment	1) Qualified operator must inspect machine prior to use. Faulty or inappropriate equipment shall be put out of service
	Moving/rotating equipment	1) All appropriate guarding is to be in place prior to use. 2) Set up adequate exclusion zone.
	Impact by suspended loads	1) Do not walk underneath suspended loads.
	Injury (hearing, muscle strain)	1) Use proper PPE 2) Use proper lifting techniques, buddy system
	Vapor & Airborne particles/wind blown dust	1) Monitor Air concentrations using PID, LEL meter. 2) Stop work if hazardous conditions are identified. 3) Wear appropriate PPE.
	Slip/Trip/Fall	1) Keep work area tidy and clean. 2) Keep work surfaces dry. 3) Be aware of footing and excavation areas. 4) Do not walk around edges of excavation.
	Heat/Cold Stress	1) Take regular breaks. 2) Consume adequate beverages
	Working at heights	1) No work to be conducted above 4' without fall restraint equipment.
	Leakage of fuel & hydraulic fluid	1) Have ready access to absorbent materials
	Heavy Lifting	1) Do not lift or move heavy equipment without assistance.
USE SPACE BELOW FOR ADDITIONAL SITE SPECIFIC RISKS AND CONDITIONS NOT COVERED ABOVE		

EnviroTrac
Environmental Services

JOB SAFETY ANALYSIS

Task: Trenching/Soil Excavation

Procedural Step / Activity List the tasks required to perform the activity in the sequence they are carried out.	**Hazard** Against each task list the hazards that could cause injury when the task is performed.	**Contingencies/Control Measures** List the control measures required to eliminate or minimize the risk of injury arising from the identified hazard.

Add additional sheets, if necessary

EnviroTrac
Environmental Services

JOB SAFETY ANALYSIS

Task: Well Abandonment

Project:

Date of Hazard Assessment:

Date of revision:

Person(s) conducting Hazard Assessment

Procedural Step / Activity List the tasks required to perform the activity in the sequence they are carried out.	**Hazard** Against each task list the hazards that could cause injury when the task is performed.	**Contingencies/Control Measures** List the control measures required to eliminate or minimize the risk of injury arising from the identified hazard.
Mobilization to and from site	Driving accidents	1) Verify vehicle operating condition against pre-trip check list. 2) Use defensive driving techniques (Smith System Driving Keys), avoid backing or back with caution, wear seatbelt. 3) Be aware of weather conditions and adjust driving accordingly. 4) Do not use cell phone or Nextel Direct Connect during driving, minimize other distractions, be aware of fatigue. 5) Ensure all tools, equipment, materials, supplies, containers, and personal effects are secure and stowed for transportation.
	Criminal Activity	1) Lock vehicle when unattended 2) Attempt to park vehicle in secure location
Biohazards (Be aware during ALL site tasks)	Animal Droppings	Do not touch, sweep, or disturb w/o proper cleaning procedure and proper PPE.
	Mosquitoes, wasps, ticks, spiders (poisonous and biting), other biting insects	Use insect repellent on clothes, exposed skin, wear appropriate gloves, and if necessary, insect mesh netting designed to be used with a hard hat, and taped down to the shirt. If bitten, track progress of healing and seek medical attention, as appropriate.
	Poisonous Plants	Be aware of season and be able to recognize poisonous plants to avoid. Wearing long sleeves and long pants as appropriate. If contact,
	Indigenous Animals	Be aware of environment and the wildlife found there, when walking though brush, be as loud as possible as a warning and to not startle any animals. Watch for: snakes, rodents, dogs/cats, bears, etc.
	Hypodermic Needles	Do not touch nor try to remove needles. Call supervisor for direction.
Site Walkover	Traffic	1) Wear High Visibility Apparel – safety vests, etc. 2) Be aware of traffic patterns and other activities/work being conducted at site 3) Use buddy system, if more than one person
	Slip/Trip/Fall	1) Inspect/be aware of ground conditions and wet, icy, or slippery conditions 2) Clear trip hazards, when possible
	Physical / chemical hazards	1) Proper PPE (safety glasses, hand protection) 2) Use proper tools for job 3) Use proper lifting techniques / use assistance for lifts > 50 lbs 4) Wash hands and face after using concrete or other caustic materials

JOB SAFETY ANALYSIS

Task: Well Abandonment

Procedural Step / Activity List the tasks required to perform the activity in the sequence they are carried out.	**Hazard** Against each task list the hazards that could cause injury when the task is performed.	**Contingencies/Control Measures** List the control measures required to eliminate or minimize the risk of injury arising from the identified hazard.
Well Abandonment	Possible Fire/Explosion	Use PID to monitor LEL prior to starting non-intrinsically safe equipment in a Class 1 area. Institute LEL Mitigation Plan if over 10% of LEL
	Slip/Trip/Fall	1) Inspect/be aware of ground and flooring and wet, icy, or slippery conditions 2) Clear trip hazards, when possible
	Physical / chemical hazards	1) Proper PPE (safety glasses, hand protection) 2) Use proper tools for job 3) Use proper lifting techniques / use assistance for lifts > 50 lbs 4) Wash hands and face after using concrete or other caustic materials
USE SPACE BELOW FOR ADDITIONAL SITE SPECIFIC RISKS AND CONDITIONS NOT COVERED ABOVE		

JOB SAFETY ANALYSIS

Task: Well Abandonment

Procedural Step / Activity List the tasks required to perform the activity in the sequence they are carried out.	**Hazard** Against each task list the hazards that could cause injury when the task is performed.	**Contingencies/Control Measures** List the control measures required to eliminate or minimize the risk of injury arising from the identified hazard.

Add additional sheets, if necessary

APPENDIX C

DUST MONITORING PLAN

343-351 Summer Street
Somerville, Massachusetts

MassDEP RTNs 3-33735 and 3-34098

June 16, 2017

Prepared for:

351 Summer LLC
c/o The Maggiore Companies
13 Wheeling Avenue
Woburn, Massachusetts 01801

Prepared by:

EnviroTrac Ltd.
2 Merchant Street
Suite 2
Sharon, Massachusetts 02067

A Full Service Environmental Consulting and Contracting Firm

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2.2 PERIMETER MONITORING LOCATIONS 2
3.0 MITIGATION MEASURES **2**

FIGURE

Figure 1 Dust Monitoring Locations

1.0 INTRODUCTION

On behalf of 351 Summer LLC (351 Summer), EnviroTrac Ltd. (EnviroTrac) prepared this Dust Monitoring Plan (DMP) for fugitive dust potentially containing lead and polycyclic aromatic hydrocarbons (PAHs), to establish the requirements, methods, and ambient air monitoring activities planned during construction-related remediation activities at the properties located at 343-349 and 351 Summer Street in Somerville, Massachusetts (the Site).

Details of site characterization, planned remediation activities, data, figures, and the schedule of work to be conducted at the Site are provided in the Release Abatement Measure (RAM) Plan dated May 18, 2017, to which this DMP is attached. The DMP was developed to support the activities described in the RAM Plan.

1.1 Overview

Fugitive dust potentially impacted with metals and PAHs may be generated when impacted soils are excavated or otherwise disturbed. Site redevelopment and/or remediation activities involving impacted soils, including pre-excavation, excavation, and loading of impacted soils onto trucks for off-site disposal may have the potential to impact ambient air at and surrounding the Site.

Perimeter dust monitoring will be conducted by EnviroTrac during construction activities to monitor fugitive dust concentrations. As such, mitigation measures to control potential dust are described in this document. The contractor will be responsible for monitoring worker exposures within the work zone and implementing measures to reduce the dust. The contractor will employ dust control measures to limit the creation of airborne dust. Standard dust control, such as wetting the exposed ground surface, will be employed where heavy equipment will be traveling and where dust is generated.

2.0 Perimeter Dust Monitoring

Environmental perimeter dust monitoring will be conducted at the Site for the duration of construction and/or remedial activities, such as:

- Possible on-site remediation of TCLP-failed soils;
- Management of lead and/or PAHs-impacted stockpiles;
- Excavation activities that may expose or disturb lead and/or PAHs-impacted soils, and;
- Possible source area remedial excavation.

Perimeter dust monitoring is not planned during non-working hours (nights and weekends) because soils will not be disturbed during those times.

2.1 Daily Monitoring and Equipment

Ambient air in the vicinity of excavation areas will be screened using a photoionization detector (PID) equipped with a 10.6 electron volt lamp, calibrated daily using isobutylene. The PID will be capable of screening total organic vapors (TOVs) in parts per million by volume (ppmv). Particulate dust will be monitored at upwind and downwind locations at the Site for the duration of construction utilizing perimeter dust monitoring equipment.

Real time particulate monitoring will be active during each day of soil excavation and management. A total of three (3) TSI DUSTTRAK II Desktop 8530 Dust/Aerosol Monitors will be deployed around the site perimeter. The DUSTTRAK II is a battery-operated, data-logging, light-scattering laser photometer that provides real-time aerosol mass readings.

Utilizing the methodology outlined in "*Real-Time Air Monitoring at Construction and Remediation Sites to Estimate Risks of Contaminated Dust Migration*", by Cynthia Weidner, John Fitzgerald and Maureen Vallatini of MassDEP, an action level of 150 µg/m^3 for the Site PM-10 reading was selected. This is a conservative action level, as the 150 µg/m^3 value is the value of the 24-hour average PM-10 concentration specified by the USEPA National Ambient Air Quality Standards for particulate matter. The Site PM-10 reading will be calculated by subtracting the upwind reading (background) from the downwind reading. Readings will be taken every two (2) hours during site activities and recorded on a site log sheet.

2.2 Perimeter Monitoring Locations

Monitoring of ambient air and dust will be conducted at the perimeter of the Site. Screening and/or sampling locations will be biased towards the residents along Hawthorne and Summer Streets, located north and south of the Site, respectively. Screening will be conducted approximately five feet above ground surface in the breathing zone. Additional or different perimeter monitoring locations will be selected due based on the location, nature, and intensity of construction activities and/or weather conditions. Monitoring locations will be determined daily to account for forecast wind direction, as determined by the National Weather Service. DUSTTRAK monitoring stations will be located at the daily upwind and downwind locations, and a third stationary unit will be deployed along the rear (northern) fence line, near the northeast corner.

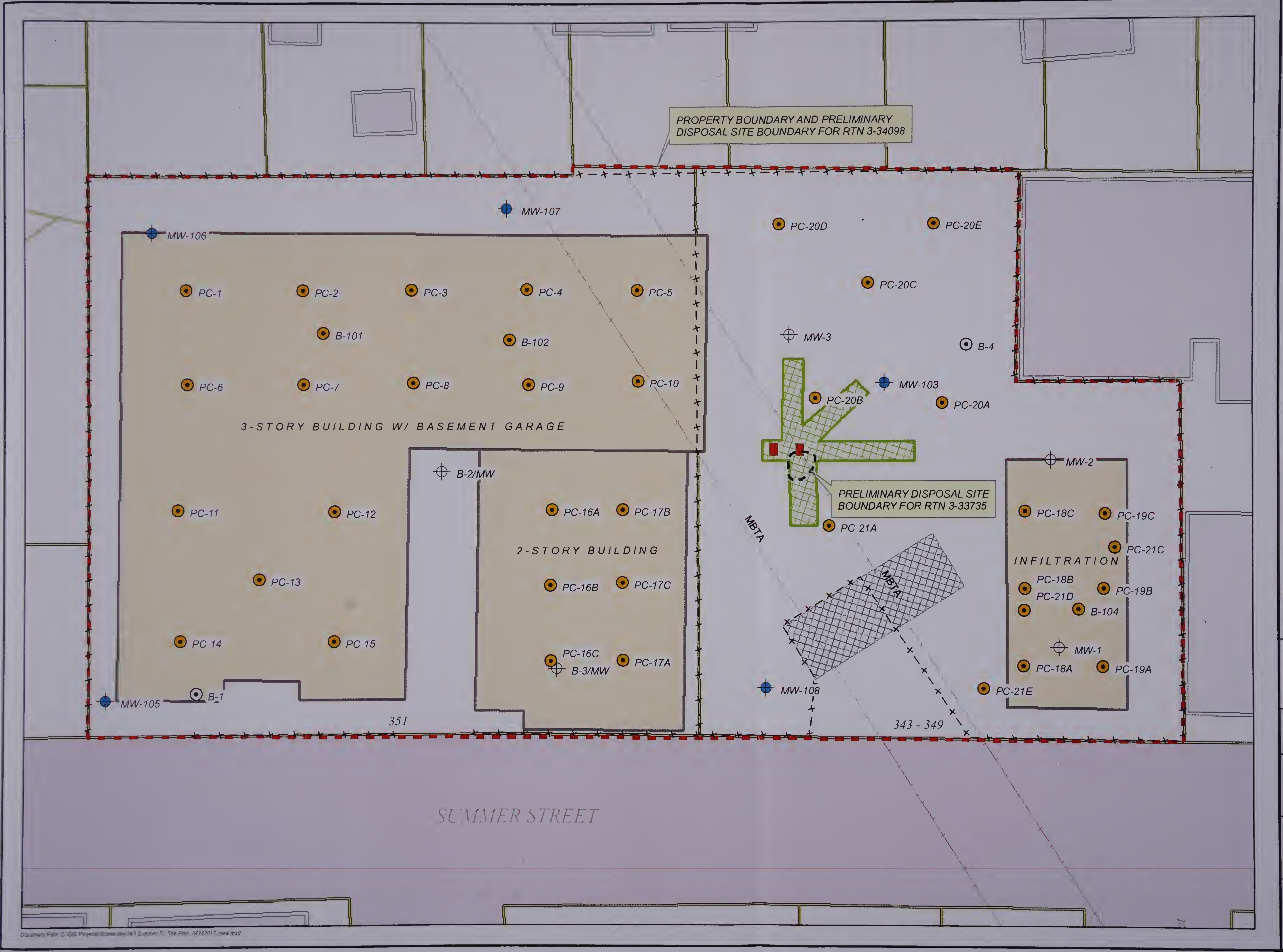
3.0 MITIGATION MEASURES

In order to limit dust particulates in ambient air, the following mitigation measures may be taken:

- Limit the volume of impacted soils being managed at any one time;
- Limit the size of the active open excavation;
- Conduct construction activities during favorable weather conditions;
- Consider wind direction and/or;
- Apply vapor- and dust-suppressing products, such as water or foam.

If necessary, any of the above mitigation measures may be employed to decrease elevated dust particulates if indicated by a Site PM-10 reading of greater than 150 µg/m^3. Should dust particulates continue to be elevated after employing mitigation measures, work will stop to evaluate environmental site conditions and conduct appropriate additional mitigation measures.

FIGURE



LEGEND

🟥 343-351 PROPERTY BOUNDARY
× — × · FENCE
- - - - UST EXCAVATION
▭ PROPOSED IMPROVEMENTS
▨ MBTA VENT
🟥 FORMER UST LOCATION
▨ TEST PITS
● SOIL BORING
⊕ MONITORING WELL
⊙ HISTORIC SOIL BORING
⊕ HISTORIC MONITORING WELL

Data Source: Office of Geographic Information (MassGIS), Commonwealth of Massachusetts, MassIT.

0 25 50
Feet Feet
APPROXIMATE SCALE

REVISED BY: RHB
REVISION DATE: 5/18/2017

FIGURE
2

SITE PLAN

343-351 SUMMER STREET
SOMERVILLE, MASSACHUSETTS

EnviroTrac
Environmental Services

APPENDIX D

FOCUSED RISK ASSESSMENT IN SUPPORT OF CONSTRUCTION RELEASE ABATEMENT MEASURE

343-351 Summer Street
Somerville, Massachusetts

MassDEP RTNs 3-33735 and 3-34098

June 16, 2017

Prepared for:

351 Summer LLC
c/o The Maggiore Companies
13 Wheeling Avenue
Woburn, Massachusetts 01801

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Table 7 Summary of Soil Analytical Data (Building Footprint) – EPH, VPH
Table 8 Summary of Soil Analytical Data (Building Footprint) – All Other Analyses
Table 9 Summary of Soil Statistical Data and Contaminants of Concern Identification
Table 10 Summary of Soil Exposure Point Concentrations: 0 – 15 feet Below Surface Grade

APPENDICES

Appendix A MassDEP ShortForms

1.0 INTRODUCTION

Pursuant to 310 CMR 40.0442(3)(b), a focused human health risk assessment was conducted for the Property located at 343-349 and 351 Summer Street in Somerville, Massachusetts in support of a Construction Release Abatement Measure (RAM). The objective of the human health risk assessment is to characterize the nature of potential risks to construction workers who may be exposed to oil and/or hazardous materials (OHM) during the redevelopment of the Site in addition to surrounding populations and future occupants of the proposed building.

The risk assessment was conducted in accordance with protocols for Method 3 Risk Characterization as found in the Massachusetts Contingency Plan, as well as "Guidance for Disposal Site Risk Characterization in Support of the Massachusetts Contingency Plan".

Planned excavation activities during redevelopment will occur up to a depth of approximately 15 feet below ground surface (bgs). Environmental investigations at the Site identified petroleum hydrocarbons, polycyclic aromatic hydrocarbons (PAHs), and metals impacts in soil. Potential risks resulting from exposure to impacted soils were characterized. Planned remedial activities under the RAM will be to excavate and dispose of impacted soil to aid in achieving a condition of No Significant Risk (NSR) for future users and expedite conditions leading toward a Permanent Solution.

Depth to groundwater at the Site ranges from approximately eight to 21 feet bgs; however, environmental investigations conducted to date have not identified impacts in groundwater. Therefore, potential risks resulting from exposure to impacted groundwater were not evaluated. Groundwater data are summarized in **Tables 1 and 2**.

A Site Plan, depicting current and proposed structures, as well as other pertinent features, is provided as **Figure 1**.

2.0 HAZARD IDENTIFICATION

Available environmental data was used to identify the contaminants of concern (COCs) for which risks were calculated. Details related to Site description, release history, and assessment activities is provided in the RAM Plan to which this report is attached. In consideration of the proposed construction activities, the primary media of concern is soil. All soil data collected between 2016 and 2017 are summarized in **Tables 3 through 5**.

3.0 EXPOSURE ASSESSMENT

The objective of the Exposure Assessment is to estimate the type and magnitude of potential human exposures to COCs present or migrating from the Site. To assess the potential for human to be exposed to COCs, all reasonable Exposure Points and potential exposure pathways were identified. Exposure estimates were determined using calculated Exposure Point Concentrations (EPCs).

3.1 Potential Receptors and Exposure Pathways

For the purpose of this focused risk characterization, current exposure is quantified only for the construction worker who is potentially exposed to contaminated media during the course of

redevelopment at the Site. Although other current receptors, such as residents and trespassers, may potentially encounter soil COCs present in or migrating from the Site during redevelopment, it is assumed that such exposure would be limited to discrete and/or short-term events, given the security measures (i.e. – temporary fencing) and dust mitigation measures that will be employed during construction.

Potential future receptors include surrounding populations and future occupants of the proposed building. Using a conservative approach, potential future exposure is quantified for both residents and trespassers.

Potential exposure pathways to soil include dermal contact, incidental ingestion, and inhalation and ingestion of fugitive dust particles.

3.2 Soil Exposure Point Concentrations

Tables 3 through 5 summarizes available soil data collected from on the Site property. Data summarized in **Tables 6 through 8** were used to perform statistical analyses to identify soil COCs (**Table 9**) and to calculate EPCs for soil for each COC. Samples included in EPC calculations are those that are indicative of current conditions.

Table 10 summarizes calculated EPCs for soil for each COC. For each COC detected within this Exposure Point, the arithmetic mean of the sample concentrations collected were utilized as the EPC. Using the arithmetic mean is appropriate because the statistical dataset is normally distributed on a logarithmic scale; therefore, the arithmetic mean does not underestimate risk. In cases where an individual COC was not detected above the laboratory reporting limit, one-half of the reporting limit was included in the arithmetic mean calculation.

3.3 Groundwater Exposure Points

As stated in **Section 1.0**, environmental investigations conducted to date have not identified impacts in groundwater. Therefore, potential risks resulting from exposure to impacted groundwater were not evaluated. Groundwater data are summarized in **Tables 1 and 2**.

4.0 CHARACTERIZATION OF RISK TO HUMAN HEALTH

As stated in **Section 3.1**, potential risk to current receptors (construction worker) and potential future receptors (residents and trespassers) were calculated. Although coal and coal ash have been identified in soil samples collected at the Site, COCs potentially associated with coal and coal ash were utilized in determining EPCs to establish potential risk to receptors. Characterization of risk to human health was evaluated using the M3RC approach as established by the MCP. A screening-level evaluation of soil risk of harm to human health was conducted utilizing MassDEP ShortForms to allow for streamlined Method 3 risk calculations based on recommended exposure assumptions and toxicity information. The pathways and receptors evaluated represent a conservative evaluation of risk at the Disposal Site.

The table below summarizes the calculated sub-chronic Hazard Index (HI) and Excess Lifetime Cancer Risk (ELCR) for a construction worker:

Exposure Pathway		**HI**	**ELCR**
Soil Exposure	Ingestion, Dermal, Inhalation GI, and Inhalation Pulmonary Pathways	1.6E-01	2.8E-07
Total Exposures		1.6E-01	2.8E-07
MCP Limits		1	1.0E-05

The table below summarizes the calculated HI and ELCR for a potential future resident:

Exposure Pathway		**Sub-chronic HI**	**Chronic HI**	**ELCR**
Soil Exposure	Ingestion, Dermal, Inhalation GI, and Inhalation Pulmonary Pathways	6.4E-01	2.8E-01	8.3E-06
Total Exposures		6.4E-01	2.8E-01	8.3E-06
MCP Limits		1	1	1.0E-05

The table below summarizes the calculated HI and ELCR for a potential future trespasser:

Exposure Pathway		**Sub-chronic HI**	**Chronic HI**	**ELCR**
Soil Exposure	Ingestion, Dermal, Inhalation GI, and Inhalation Pulmonary Pathways	3.5E-02	1.8E-02	3.3E-07
Total Exposures		3.5E-02	1.8E-02	3.3E-07
MCP Limits		1	1	1.0E-05

The sub-chronic HI, chronic HI, and ELCR for total exposures to construction workers, potential future residents, and potential future trespassers are less than MCP limits as specified at 310 CMR 40.0993(6); therefore, a condition of No Significant Risk to human health exists at the Disposal Site. The MassDEP ShortForms are provided as **Appendix A**.

5.0 DATA USABILITY AND REPRESENTATIVENESS

A Representativeness Evaluation is included in this document pursuant to the Response Action Performance Standard to ensure the adequacy of analytical and other assessment data used to support this risk characterization. In evaluating the adequacy of the data, the Site's historical use, local hydrogeologic conditions, physical characteristics, and field observations were considered in conjunction with laboratory analytical data to determine whether spatial and temporal data collected during Disposal Site Response Actions are sufficient to support this risk characterization.

5.1 Use of Field Screening Data

PID headspace screening was conducted during subsurface investigations at the Disposal Site. The PID headspace readings were consistent with the laboratory data and were used in conjunction with laboratory data to develop the Conceptual Site Model.

5.2 Sampling Rationale – Number, Spatial Distribution, and Handling of Samples

Environmental media samples were collected from the locations of potential source areas and/or areas of suspected impacts. The assessment locations were expanded horizontally and vertically based on previously obtained analytical and field screening data. With respect to field QA/QC, all samples were collected using standard operating procedures and managed under chain of custody.

5.3 Temporal Distribution of Samples

Soil samples were collected between 2016 and 2017. Soil concentrations are not expected to increase in the absence of additional releases; therefore soil EPCs are appropriate as calculated. As such, the temporal distributions of soil samples are considered adequate to generate conservative EPCs to support the risk characterization.

5.4 Completeness

The data set presented in this risk characterization is considered complete and adequate to support the conclusions of the risk characterization. Based on data obtained during Disposal Site investigations, the extent of the Disposal Site has been delineated.

5.5 Information Considered Unrepresentative

Analysis of samples collected was completed using analytical methods published by MassDEP in the Compendium of Analytical Methods (CAM) and are considered representative of current conditions.

5.6 Hot Spots

A “Hot Spot” is defined in the MCP (310 CMR 40.0006) as “a discrete area where the concentrations of oil or hazardous material are substantially higher than those present in the surround area.” In all cases, a discrete area where the concentration of an oil or hazardous material is greater than one hundred times the concentration in the surrounding area shall be considered a Hot Spot. Based on these criteria, the concentrations of lead in soil at all locations do not meet the Hot Spot definition. In addition, the soil samples are in locations that are planned for removal under the proposed RAM prior to building demolition.

5.7 Data Usability Assessment

The MCP, as set forth at 310 CMR 40.0017 and 40.0191(2)(c), requires that analytical and environmental monitoring data be scientifically valid and defensible, and of a level of precision and accuracy commensurate with its stated or intended use, taking into consideration relevant policies and guidelines issued by MassDEP and the U.S. Environmental Protection Agency, including the CAM. 310 CMR 40.0017(3)(i) further provides that all submittals document any

known conditions or findings which may affect the validity of analytical data, including unsatisfactory data obtained for blank, duplicate, surrogate or spiked samples.

As documented herein, the analysis of soil samples collected between 2016 and 2017 was completed using analytical methods defined in the CAM.

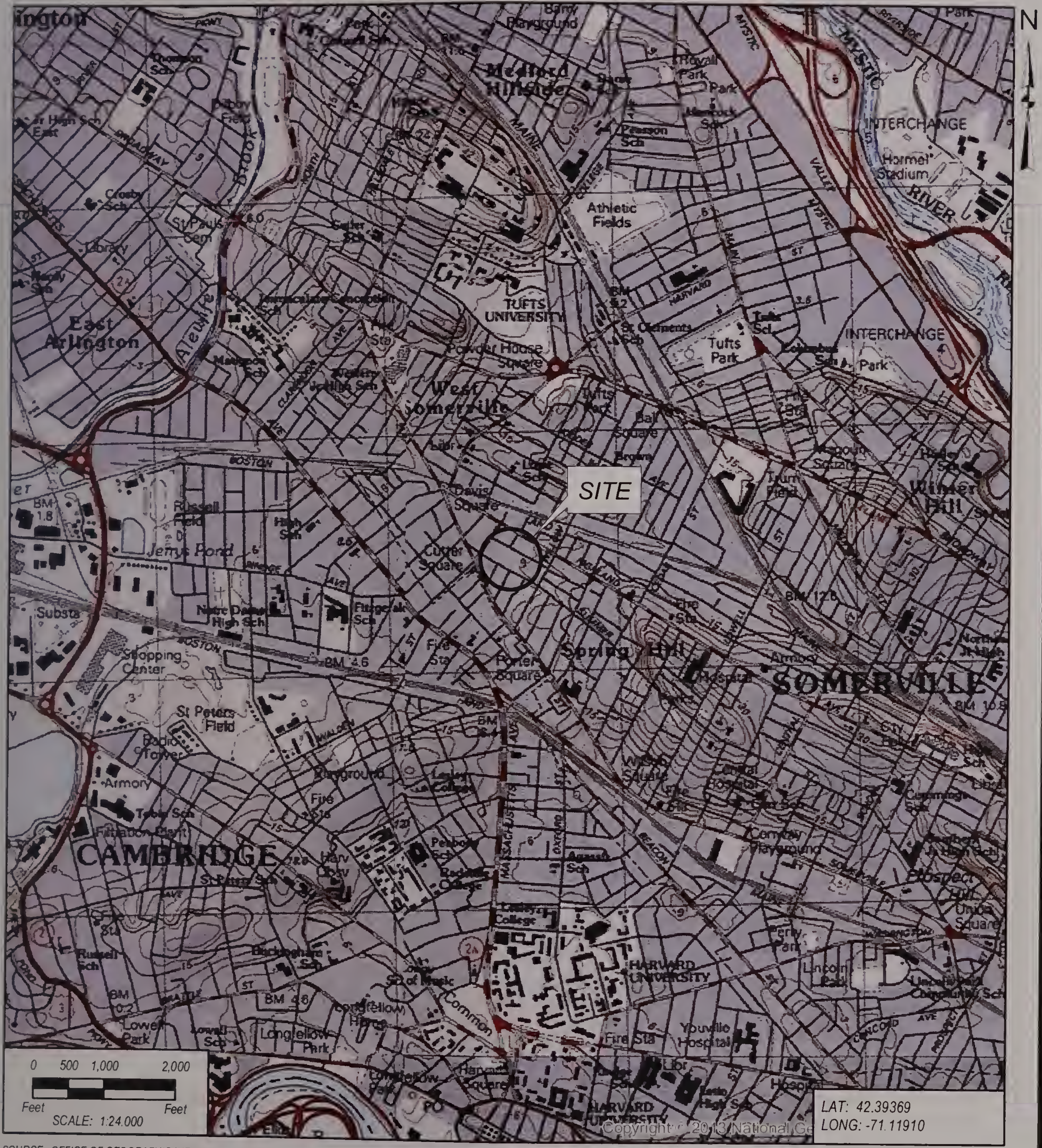
5.7.1 Data Usability Assessment Conclusion

Based on the foregoing, a review of field practices, and a review of the laboratory reports, it is the opinion of the Licensed Site Professional named herein that the analytical data obtained from samples collected during investigations associated with RTN 3-33735 and 3-34098, and considered in the risk characterization, meet CAM requirements. Therefore, the data utilized are scientifically valid and defensible, and of a sufficient level of precision, accuracy, and completeness to support this risk characterization.

6.0 SUMMARY AND CONCLUSIONS

Based on the methods and results described herein, the sub-chronic HI, chronic HI, and ELCR for total exposures to construction workers, potential future residents, and potential future trespassers are less than MCP limits as specified at 310 CMR 40.0993(6); therefore, a condition of No Significant Risk to human health exists at the Disposal Site for the receptors and exposures associated with this focused risk characterization.

FIGURES



SOURCE: OFFICE OF GEOGRAPHIC INFORMATION (MassGIS), COMMONWEALTH OF MASSACHUSETTS, MassIT.
USGS TOPOGRAPHIC MAPS: BOSTON NORTH AND BOSTON SOUTH, MA QUADRANGLES

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LOCUS MAP

343 - 351 SUMMER STREET
SOMERVILLE, MASSACHUSETTS

DRAWN BY	PROJECT	DATE	FIGURE
RHB	03.990202.01	4/23/2017	1

TABLE 2
SUMMARY OF GROUNDWATER ANALYICAL DATA

Maggiore Somerville
343-351 Summer Street
Somerville, Massachusetts

Monitoring Well ID	MW-1		MW-2		MW-3		MW-103		MW-105		MW-106		MW-107		MW-108		B-2/MW		B-3/MW		MCP Reportable Concentrations (µg/L)	MCP Method 1 Groundwater Standards (µg/L)	
Depth to Groundwater (feet)	14.30		12.60		16.58		16.81		11.31		10.41		13.17		19.5		12.22		11.97				
Screen Interval BGS (feet)	9-19		9-19		9-19		10-20		10-20		8-18		10-20		10-20		UNK		UNK				
Depth of Well (feet)	22		22		22		20		20		18		20		20		15		15		RCGW-2	GW-2	GW-3
Sample Date	8/17/16	3/31/17	8/17/16	3/31/17	8/17/16	3/31/17	8/17/16	3/31/17	8/17/16	3/31/17	8/17/16	3/31/17	8/17/16	3/31/17	8/17/16	3/31/17	8/17/16	3/31/17	8/17/16	3/31/17			
VOLATILE ORGANIC COMPOUNDS by 8260 (µg/L)																							
Acetone	<10	--	<10	--	<10	--	**14.5**	--	<10	--	<10	--	<10	--	--	--	<10	--	<10	--	50,000	50,000	50,000
Benzene	<0.50	--	<0.50	--	<0.50	--	<0.50	--	<0.50	--	<0.50	--	<0.50	--	--	--	<0.50	--	<0.50	--	1,000	1,000	10,000
Bromobenzene	<5.0	--	<5.0	--	<5.0	--	<5.0	--	<5.0	--	<5.0	--	<5.0	--	--	--	<5.0	--	<5.0	--	10,000	NE	NE
Bromochloromethane	<5.0	--	<5.0	--	<5.0	--	<5.0	--	<5.0	--	<5.0	--	<5.0	--	--	--	<5.0	--	<5.0	--	NE	NE	NE
Bromodichloromethane	<1.0	--	<1.0	--	<1.0	--	<1.0	--	<1.0	--	<1.0	--	<1.0	--	--	--	<1.0	--	<1.0	--	6	6	50,000
Bromoform	<1.0	--	<1.0	--	<1.0	--	<1.0	--	<1.0	--	<1.0	--	<1.0	--	--	--	<1.0	--	<1.0	--	700	700	50,000
Bromomethane	<2.0	--	<2.0	--	<2.0	--	<2.0	--	<2.0	--	<2.0	--	<2.0	--	--	--	<2.0	--	<2.0	--	7	7	800
2-Butanone (MEK)	<10	--	<10	--	<10	--	<10	--	<10	--	<10	--	<10	--	--	--	<10	--	<10	--	50,000	50,000	50,000
n-Butylbenzene	<5.0	--	<5.0	--	<5.0	--	<5.0	--	<5.0	--	<5.0	--	<5.0	--	--	--	<5.0	--	<5.0	--	NE	NE	NE
sec-Butylbenzene	<5.0	--	<5.0	--	<5.0	--	<5.0	--	<5.0	--	<5.0	--	<5.0	--	--	--	<5.0	--	<5.0	--	NE	NE	NE
tert-Butylbenzene	<5.0	--	<5.0	--	<5.0	--	<5.0	--	<5.0	--	<5.0	--	<5.0	--	--	--	<5.0	--	<5.0	--	NE	NE	NE
Carbon disulfide	<5.0	--	<5.0	--	<5.0	--	<5.0	--	<5.0	--	<5.0	--	<5.0	--	--	--	<5.0	--	<5.0	--	10,000	NE	NE
Carbon tetrachloride	<1.0	--	<1.0	--	<1.0	--	<1.0	--	<1.0	--	<1.0	--	<1.0	--	--	--	<1.0	--	<1.0	--	2	2	5,000
Chlorobenzene	<1.0	--	<1.0	--	<1.0	--	<1.0	--	<1.0	--	<1.0	--	<1.0	--	--	--	<1.0	--	<1.0	--	200	200	1,000
Chloroethane	<2.0	--	<2.0	--	<2.0	--	<2.0	--	<2.0	--	<2.0	--	<2.0	--	--	--	<2.0	--	<2.0	--	10,000	NE	NE
Chloroform	<1.0	--	<1.0	--	<1.0	--	<1.0	--	<1.0	--	<1.0	--	<1.0	--	--	--	<1.0	--	<1.0	--	50	50	20,000
Chloromethane	<2.0	--	<2.0	--	<2.0	--	<2.0	--	<2.0	--	<2.0	--	<2.0	--	--	--	<2.0	--	<2.0	--	10,000	NE	NE
o-Chlorotoluene	<5.0	--	<5.0	--	<5.0	--	<5.0	--	<5.0	--	<5.0	--	<5.0	--	--	--	<5.0	--	<5.0	--	10,000	NE	NE
p-Chlorotoluene	<5.0	--	<5.0	--	<5.0	--	<5.0	--	<5.0	--	<5.0	--	<5.0	--	--	--	<5.0	--	<5.0	--	NE	NE	NE
Di-Isopropyl ether	<2.0	--	<2.0	--	<2.0	--	<2.0	--	<2.0	--	<2.0	--	<2.0	--	--	--	<2.0	--	<2.0	--	10,000	NE	NE
1,2-Dibromo-3-chloropropane	<5.0	--	<5.0	--	<5.0	--	<5.0	--	<5.0	--	<5.0	--	<5.0	--	--	--	<5.0	--	<5.0	--	1,000	NE	NE
Dibromochloromethane	<1.0	--	<1.0	--	<1.0	--	<1.0	--	<1.0	--	<1.0	--	<1.0	--	--	--	<1.0	--	<1.0	--	20	20	50,000
1,2-Dibromoethane	<1.0	--	<1.0	--	<1.0	--	<1.0	--	<1.0	--	<1.0	--	<1.0	--	--	--	<1.0	--	<1.0	--	2	2	50,000
1,2-Dichlorobenzene	<1.0	--	<1.0	--	<1.0	--	<1.0	--	<1.0	--	<1.0	--	<1.0	--	--	--	<1.0	--	<1.0	--	2,000	8,000	2,000
1,3-Dichlorobenzene	<1.0	--	<1.0	--	<1.0	--	<1.0	--	<1.0	--	<1.0	--	<1.0	--	--	--	<1.0	--	<1.0	--	6,000	6,000	50,000
1,4-Dichlorobenzene	<1.0	--	<1.0	--	<1.0	--	<1.0	--	<1.0	--	<1.0	--	<1.0	--	--	--	<1.0	--	<1.0	--	60	60	8,000
Dichlorodifluoromethane	<2.0	--	<2.0	--	<2.0	--	<2.0	--	<2.0	--	<2.0	--	<2.0	--	--	--	<2.0	--	<2.0	--	100,000	NE	NE
1,1-Dichloroethane	<1.0	--	<1.0	--	<1.0	--	<1.0	--	<1.0	--	<1.0	--	<1.0	--	--	--	<1.0	--	<1.0	--	2,000	2,000	20,000
1,2-Dichloroethane	<1.0	--	<1.0	--	<1.0	--	<1.0	--	<1.0	--	<1.0	--	<1.0	--	--	--	<1.0	--	<1.0	--	5	5	20,000
1,1-Dichloroethene	<1.0	--	<1.0	--	<1.0	--	<1.0	--	<1.0	--	<1.0	--	<1.0	--	--	--	<1.0	--	<1.0	--	80	80	30,000
cis-1,2-Dichloroethene	<1.0	--	<1.0	--	<1.0	--	<1.0	--	<1.0	--	<1.0	--	<1.0	--	--	--	<1.0	--	<1.0	--	20	20	50,000
trans-1,2-Dichloroethene	<1.0	--	<1.0	--	<1.0	--	<1.0	--	<1.0	--	<1.0	--	<1.0	--	--	--	<1.0	--	<1.0	--	80	80	50,000
1,2-Dichloropropane	<2.0	--	<2.0	--	<2.0	--	<2.0	--	<2.0	--	<2.0	--	<2.0	--	--	--	<2.0	--	<2.0	--	3	3	50,000
1,3-Dichloropropane	<5.0	--	<5.0	--	<5.0	--	<5.0	--	<5.0	--	<5.0	--	<5.0	--	--	--	<5.0	--	<5.0	--	50,000	NE	NE
2,2-Dichloropropane	<5.0	--	<5.0	--	<5.0	--	<5.0	--	<5.0	--	<5.0	--	<5.0	--	--	--	<5.0	--	<5.0	--	NE	NE	NE
1,1-Dichloropropene	<5.0	--	<5.0	--	<5.0	--	<5.0	--	<5.0	--	<5.0	--	<5.0	--	--	--	<5.0	--	<5.0	--	NE	NE	NE
cis-1,3-Dichloropropene	<0.50	--	<0.50	--	<0.50	--	<0.50	--	<0.50	--	<0.50	--	<0.50	--	--	--	<0.50	--	<0.50	--	5	NE	NE
trans-1,3-Dichloropropene	<0.50	--	<0.50	--	<0.50	--	<0.50	--	<0.50	--	<0.50	--	<0.50	--	--	--	<0.50	--	<0.50	--	5	NE	NE

NOTES:

-- is not applicable or not analyzed
µg/L is micrograms per liter.
NE is not established.
BGS is below ground surface

MTBE is methyl tert butyl ether.
<2.0 is not detected at or above the laboratory reporting limit of 2.0 µg/L.
Analytes detected above the method reporting limit are in **Bold**.
Analytes detected above applicable MCP groundwater standards are in Red.

TABLES

TABLE 1
SUMMARY OF MONITORING WELL GAUGING DATA

Maggiore Somerville
343-351 Summer Street
Somerville, Massachusetts

Monitoring Well ID	Gauging Date	Top of Casing Elevation[1] (feet)	Depth to Water (feet)	Depth to Bottom (feet)	Water Table Elevation (feet)
MW-1	8/8/2016		--	--	
	8/17/2016	101.83	14.30	22.05	87.53
	3/31/2017	101.83	11.15	22.15	90.68
	4/19/2017	101.83	11.01	22.05	90.82
MW-2	8/8/2016		--	--	
	8/17/2016	101.98	12.60	22.21	89.38
	3/31/2017	101.98	9.85	21.97	92.13
	4/19/2017	101.98	9.88	21.95	92.10
MW-3	8/8/2016		--	--	
	8/17/2016	101.59	16.58	22.00	85.01
	3/31/2017	101.59	8.35	22.00	93.24
	4/19/2017	101.59	8.71	22.00	92.88
MW-103	8/8/2016		20.12	23.13	
	8/17/2016	102.72	16.81	23.25	85.91
	3/31/2017	102.72	10.12	23.23	92.60
	4/19/2017	102.72	10.47	23.20	92.25
MW-108	8/8/2016		21.00	22.85	
	8/17/2016	101.59	19.50	22.70	82.09
	3/31/2017	101.59	12.19	22.71	89.40
	4/19/2017	101.59	12.00	22.67	89.59
B-2/MW	8/8/2016		--	--	
	8/17/2016	99.29	12.22	14.85	87.07
	3/31/2017	99.29	10.87	14.85	88.42
	4/19/2017	99.29	10.53	14.60	88.76
B-3/MW	8/8/2016		--	--	
	8/17/2016	98.36	11.97	14.35	86.39
	3/31/2017	98.36	10.47	14.35	87.89
	4/19/2017	98.36	9.70	14.40	88.66
MW-105	8/8/2016		11.27	20.04	
	8/17/2016	97.10	11.31	19.71	85.79
	3/31/2017	97.10	9.99	19.71	87.11
	4/19/2017	97.10	9.58	19.75	87.52
MW-106	8/8/2016		12.90	17.80	
	8/17/2016	98.17	10.41	17.80	87.76
	3/31/2017	98.17	5.17	17.80	93.00
	4/19/2017	98.17	5.93	17.60	92.24
MW-107	8/8/2016		17.81	19.70	
	8/17/2016	99.56	13.17	19.82	86.39
	3/31/2017	99.56	8.02	19.71	91.54
	4/19/2017	99.56	8.12	19.85	91.44

NOTES:

-- is not measured

Latest Top of Casing survey performed was on August 17, 2016.

[1] Based on assumed benchmark = 100.00' Northeast corner of MBTA Vent Pad.

TABLE 2
SUMMARY OF GROUNDWATER ANALYTICAL DATA

Maggiore Somerville
343-351 Summer Street
Somerville, Massachusetts

Monitoring Well ID	MW-1		MW-2		MW-3		MW-103		MW-105		MW-106		MW-107		MW-108		B-2/MW		B-3/MW		MCP Reportable Concentrations (µg/L)	MCP Method 1 Groundwater Standards (µg/L)	
Depth to Groundwater (feet)	14.30		12.60		16.58		16.81		11.31		10.41		13.17		19.5		12.22		11.97				
Screen Interval BGS (feet)	9-19		9-19		9-19		10-20		10-20		8-18		10-20		10-20		UNK		UNK				
Depth of Well (feet)	22		22		22		20		20		18		20		20		15		15		RCGW-2	GW-2	GW-3
1,4-Dioxane	<25	--	<25	--	<25	--	<25	--	<25	--	<25	--	<25	--	--	--	<25	--	<25	--	6,000	6,000	50,000
Ethyl Ether	<5.0	--	<5.0	--	<5.0	--	<5.0	--	<5.0	--	<5.0	--	<5.0	--	--	--	<5.0	--	<5.0	--	10,000	NE	NE
Ethylbenzene	<1.0	--	<1.0	--	<1.0	--	<1.0	--	<1.0	--	<1.0	--	<1.0	--	--	--	<1.0	--	<1.0	--	5,000	20,000	5,000
Hexachlorobutadiene	<5.0	--	<5.0	--	<5.0	--	<5.0	--	<5.0	--	<5.0	--	<5.0	--	--	--	<5.0	--	<5.0	--	50	50	3,000
2-Hexanone	<10	--	<10	--	<10	--	<10	--	<10	--	<10	--	<10	--	--	--	<10	--	<10	--	10,000	NE	NE
Isopropylbenzene	<5.0	--	<5.0	--	<5.0	--	<5.0	--	<5.0	--	<5.0	--	<5.0	--	--	--	<5.0	--	<5.0	--	100,000	NE	NE
p-Isopropyltoluene	<5.0	--	<5.0	--	<5.0	--	<5.0	--	<5.0	--	<5.0	--	<5.0	--	--	--	<5.0	--	<5.0	--	NE	NE	NE
Methyl Tert Butyl Ether	<1.0	--	<1.0	--	<1.0	--	<1.0	--	<1.0	--	<1.0	--	<1.0	--	--	--	<1.0	--	<1.0	--	5,000	50,000	50,000
4-Methyl-2-pentanone (MIBK)	<5.0	--	<5.0	--	<5.0	--	<5.0	--	<5.0	--	<5.0	--	<5.0	--	--	--	<5.0	--	<5.0	--	50,000	50,000	50,000
Methylene bromide	<5.0	--	<5.0	--	<5.0	--	<5.0	--	<5.0	--	<5.0	--	<5.0	--	--	--	<5.0	--	<5.0	--	50,000	NE	NE
Methylene chloride	<2.0	--	<2.0	--	<2.0	--	<2.0	--	<2.0	--	<2.0	--	<2.0	--	--	--	<2.0	--	<2.0	--	2,000	2,000	50,000
Naphthalene	<5.0	--	<5.0	--	<5.0	--	<5.0	--	<5.0	--	<5.0	--	<5.0	--	--	--	<5.0	--	<5.0	--	700	700	20,000
n-Propylbenzene	<5.0	--	<5.0	--	<5.0	--	<5.0	--	<5.0	--	<5.0	--	<5.0	--	--	--	<5.0	--	<5.0	--	10,000	NE	NE
Styrene	<5.0	--	<5.0	--	<5.0	--	<5.0	--	<5.0	--	<5.0	--	<5.0	--	--	--	<5.0	--	<5.0	--	100	100	6,000
tert-Amyl Methyl Ether	<2.0	--	<2.0	--	<2.0	--	<2.0	--	<2.0	--	<2.0	--	<2.0	--	--	--	<2.0	--	<2.0	--	NE	NE	NE
tert-Butyl Ethyl Ether	<2.0	--	<2.0	--	<2.0	--	<2.0	--	<2.0	--	<2.0	--	<2.0	--	--	--	<2.0	--	<2.0	--	NE	NE	NE
1,1,1,2-Tetrachloroethane	<1.0	--	<1.0	--	<1.0	--	<1.0	--	<1.0	--	<1.0	--	<1.0	--	--	--	<1.0	--	<1.0	--	100	10	50,000
1,1,2,2-Tetrachloroethane	<0.50	--	<0.50	--	<0.50	--	<0.50	--	<0.50	--	<0.50	--	<0.50	--	--	--	<0.50	--	<0.50	--	9	9	50,000
Tetrachloroethene	<1.0	--	<1.0	--	<1.0	--	<1.0	--	<1.0	--	<1.0	--	<1.0	--	--	--	<1.0	--	<1.0	--	50	50	30,000
Tetrahydrofuran	<10	--	<10	--	<10	--	<10	--	<10	--	<10	--	<10	--	--	--	<10	--	<10	--	50,000	NE	NE
Toluene	<1.0	--	<1.0	--	<1.0	--	<1.0	--	<1.0	--	<1.0	--	<1.0	--	--	--	<1.0	--	<1.0	--	40,000	50,000	40,000
1,2,3-Trichlorobenzene	<5.0	--	<5.0	--	<5.0	--	<5.0	--	<5.0	--	<5.0	--	<5.0	--	--	--	<5.0	--	<5.0	--	NE	NE	NE
1,2,4-Trichlorobenzene	<5.0	--	<5.0	--	<5.0	--	<5.0	--	<5.0	--	<5.0	--	<5.0	--	--	--	<5.0	--	<5.0	--	200	200	50,000
1,1,1-Trichloroethane	<1.0	--	<1.0	--	<1.0	--	<1.0	--	<1.0	--	<1.0	--	<1.0	--	--	--	<1.0	--	<1.0	--	4,000	4,000	20,000
1,1,2-Trichloroethane	<1.0	--	<1.0	--	<1.0	--	<1.0	--	<1.0	--	<1.0	--	<1.0	--	--	--	<1.0	--	<1.0	--	900	900	50,000
Trichloroethene	<1.0	--	<1.0	--	<1.0	--	<1.0	--	<1.0	--	<1.0	--	<1.0	--	--	--	<1.0	--	<1.0	--	5	5	5,000
Trichlorofluoromethane	<1.0	--	<1.0	--	<1.0	--	<1.0	--	<1.0	--	<1.0	--	<1.0	--	--	--	<1.0	--	<1.0	--	100,000	NE	NE
1,2,3-Trichloropropane	<5.0	--	<5.0	--	<5.0	--	<5.0	--	<5.0	--	<5.0	--	<5.0	--	--	--	<5.0	--	<5.0	--	10,000	NE	NE
1,2,4-Trimethylbenzene	<5.0	--	<5.0	--	<5.0	--	<5.0	--	<5.0	--	<5.0	--	<5.0	--	--	--	<5.0	--	<5.0	--	100,000	NE	NE
1,3,5-Trimethylbenzene	<5.0	--	<5.0	--	<5.0	--	<5.0	--	<5.0	--	<5.0	--	<5.0	--	--	--	<5.0	--	<5.0	--	1,000	NE	NE
Vinyl chloride	<1.0	--	<1.0	--	<1.0	--	<1.0	--	<1.0	--	<1.0	--	<1.0	--	--	--	<1.0	--	<1.0	--	2	2	50,000
m,p-Xylene	<1.0	--	<1.0	--	<1.0	--	<1.0	--	<1.0	--	<1.0	--	<1.0	--	--	--	<1.0	--	<1.0	--	3,000	3,000	5,000
o-Xylene	<1.0	--	<1.0	--	<1.0	--	<1.0	--	<1.0	--	<1.0	--	<1.0	--	--	--	<1.0	--	<1.0	--	3,000	3,000	5,000
Xylene (total)	<1.0	--	<1.0	--	<1.0	--	<1.0	--	<1.0	--	<1.0	--	<1.0	--	--	--	<1.0	--	<1.0	--	3,000	3,000	5,000

NOTES:

-- is not applicable or not analyzed
µg/L is micrograms per liter
NE is not established
BGS is below ground surface

MTBE is methyl tert butyl ether.
<2.0 is not detected at or above the laboratory reporting limit of 2.0 µg/L.
Analytes detected above the method reporting limit are in **Bold**.
Analytes detected above applicable MCP groundwater standards are in Red.

TABLE 2

SUMMARY OF GROUNDWATER ANALYICAL DATA

Maggiore Somerville
343-351 Summer Street
Somerville, Massachusetts

Monitoring Well ID	MW-1		MW-2		MW-3		MW-103		MW-105		MW-106		MW-107		MW-108		B-2/MW		B-3/MW		**MCP Reportable Concentrations (µg/L)**	**MCP Method 1 Groundwater Standards (µg/L)**	
Depth to Groundwater (feet)	14.30		12.60		16.58		16.81		11.31		10.41		13.17		19.5		12.22		11.97				
Screen Interval BGS (feet)	9-19		9-19		9-19		10-20		10-20		8-18		10-20		10-20		UNK		UNK				
Depth of Well (feet)	22		22		22		20		20		18		20		20		15		15		RCGW-2	GW-2	GW-3
VOLATILE PETROLEUM HYDROCARBONS (µg/L)																							
C5-C8 Aliphatics	<50	--	<50	--	<50	--	<50	--	<50	--	<50	--	<50	--	--	--	<50	--	<50	--	3,000	3,000	50,000
C9-C12 Aliphatics	<50	--	<50	--	<50	--	<50	--	<50	--	<50	--	<50	--	--	--	<50	--	<50	--	5,000	5,000	50,000
C9-C10 Aromatics	<50	--	<50	--	<50	--	<50	--	<50	--	<50	--	<50	--	--	--	<50	--	<50	--	4,000	4,000	50,000
Benzene	<1.0	--	<1.0	--	<1.0	--	<1.0	--	<1.0	--	<1.0	--	<1.0	--	--	--	<1.0	--	<1.0	--	1,000	1,000	10,000
Ethylbenzene	<2.0	--	<2.0	--	<2.0	--	<2.0	--	<2.0	--	<2.0	--	<2.0	--	--	--	<2.0	--	<2.0	--	5,000	20,000	5,000
MTBE	<1.0	--	<1.0	--	<1.0	--	<1.0	--	<1.0	--	<1.0	--	<1.0	--	--	--	<1.0	--	<1.0	--	5,000	50,000	50,000
Naphthalene	<3.0	--	<3.0	--	<3.0	--	<3.0	--	<3.0	--	<3.0	--	<3.0	--	--	--	<3.0	--	<3.0	--	700	700	20,000
Toluene	<2.0	--	<2.0	--	<2.0	--	<2.0	--	<2.0	--	<2.0	--	<2.0	--	--	--	<2.0	--	<2.0	--	40,000	50,000	40,000
Xylenes (total)	<4.0	--	<4.0	--	<4.0	--	<4.0	--	<4.0	--	<4.0	--	<4.0	--	--	--	<4.0	--	<4.0	--	3,000	3,000	5,000
EXTRACTABLE PETROLEUM HYDROCARBONS (µg/L)																							
C9-C18 Aliphatics	<110	<110	<110	<110	<120	<110	<120	<110	<110	<110	<120	<110	<130	<110	<100	<110	<110	<110	<110	<110	5,000	5,000	50,000
C19-C36 Aliphatics	<110	<110	**362**	<110	<120	<110	<120	<110	<110	<110	<120	<110	<130	<110	<100	<110	<110	<110	<110	<110	50,000	NE	50,000
C11-C22 Aromatics	<110	<110	<110	<110	<120	<110	<120	<110	<110	<110	<120	<110	<130	<110	<100	<110	<110	<110	<110	<110	5,000	50,000	5,000
Acenaphthene	<5.5	<0.11	<5.6	<0.11	<5.9	<0.11	<6.1	<0.11	<5.6	<0.11	<5.8	<0.11	<6.3	**0.14**	<5.1	<0.11	<5.6	<0.11	<5.6	<0.11	600	NE	10,000
Acenaphthylene	<5.5	<0.11	<5.6	<0.11	<5.9	<0.11	<6.1	<0.11	<5.6	<0.11	<5.8	<0.11	<6.3	**0.14**	<5.1	<0.11	<5.6	<0.11	<5.6	<0.11	40	10,000	40
Anthracene	<5.5	<0.11	<5.6	<0.11	<5.9	<0.11	<6.1	<0.11	<5.6	<0.11	<5.8	<0.11	<6.3	**0.36**	<5.1	<0.11	<5.6	<0.11	<5.6	<0.11	30	NE	30
Benzo(a)anthracene	<5.5	<0.056	<5.6	**0.062**	<5.9	<0.057	<6.1	**0.24**	<5.6	<0.055	<5.8	<0.054	<6.3	**0.89**	<5.1	**0.06**	<5.6	<0.054	<5.6	<0.056	1,000	NE	1,000
Benzo(a)pyrene	<5.5	<0.11	<5.6	**0.11**	<5.9	<0.11	<6.1	**0.25**	<5.6	<0.11	<5.8	<0.11	<6.3	**0.88**	<5.1	**0.11**	<5.6	<0.11	<5.6	<0.11	500	NE	500
Benzo(b)fluoranthene	<5.5	<0.056	<5.6	**0.069**	<5.9	<0.057	<6.1	**0.27**	<5.6	<0.055	<5.8	<0.054	<6.3	**1.5**	<5.1	**0.055**	<5.6	<0.054	<5.6	<0.056	400	NE	400
Benzo(g,h,i)perylene	<5.5	<0.11	<5.6	<0.11	<5.9	<0.11	<6.1	**0.14**	<5.6	<0.11	<5.8	<0.11	<6.3	**0.72**	<5.1	<0.11	<5.6	<0.11	<5.6	<0.11	20	NE	20
Benzo(k)fluoranthene	<5.5	<0.11	<5.6	<0.11	<5.9	<0.11	<6.1	**0.13**	<5.6	<0.11	<5.8	<0.11	<6.3	**0.65**	<5.1	<0.11	<5.6	<0.11	<5.6	<0.11	100	NE	100
Chrysene	<5.5	<0.11	<5.6	<0.11	<5.9	<0.11	<6.1	**0.21**	<5.6	<0.11	<5.8	<0.11	<6.3	**1.1**	<5.1	<0.11	<5.6	<0.11	<5.6	<0.11	70	NE	70
Dibenz(a,h)anthracene	<5.5	<0.11	<5.6	<0.11	<5.9	<0.11	<6.1	<0.11	<5.6	<0.11	<5.8	<0.11	<6.3	**0.25**	<5.1	<0.11	<5.6	<0.11	<5.6	<0.11	40	NE	40
Fluoranthene	<5.5	<0.11	<5.6	**0.11**	<5.9	<0.11	<6.1	**0.51**	<5.6	<0.11	<5.8	<0.11	<6.3	**2.1**	<5.1	**0.11**	<5.6	<0.11	<5.6	<0.11	200	NE	200
Fluorene	<5.5	<0.11	<5.6	<0.11	<5.9	<0.11	<6.1	<0.11	<5.6	<0.11	<5.8	<0.11	<6.3	**0.17**	<5.1	<0.11	<5.6	<0.11	<5.6	<0.11	40	NE	40
Indeno(1,2,3-cd)pyrene	<5.5	<0.11	<5.6	**0.16**	<5.9	<0.11	<6.1	**0.27**	<5.6	<0.11	<5.8	<0.11	<6.3	**1**	<5.1	**0.14**	<5.6	<0.11	<5.6	<0.11	100	NE	100
2-Methylnaphthalene	<5.5	<0.22	<5.6	<0.22	<5.9	<0.23	<6.1	<0.22	<5.6	<0.22	<5.8	<0.22	<6.3	<0.22	<5.1	<0.22	<5.6	<0.22	<5.6	<0.22	2,000	2,000	20,000
Naphthalene	<5.5	**0.27**	<5.6	**0.26**	<5.9	**0.28**	<6.1	**0.46**	<5.6	**0.23**	<5.8	**0.26**	<6.3	**0.31**	<5.1	<0.22	<5.6	**0.28**	<5.6	**0.26**	700	700	20,000
Phenanthrene	<5.5	**0.056**	<5.6	**0.066**	<5.9	<0.057	<6.1	**0.3**	<5.6	**0.073**	<5.8	**0.10**	<6.3	**1.2**	<5.1	**0.072**	<5.6	<0.054	<5.6	<0.056	10,000	NE	10,000
Pyrene	<5.5	<0.11	<5.6	<0.11	<5.9	<0.11	<6.1	**0.42**	<5.6	<0.11	<5.8	<0.11	<6.3	**1.8**	<5.1	<0.11	<5.6	<0.11	<5.6	<0.11	20	NE	20
METALS (µg/L)																							
Antimony	<6.0	<6.0	<6.0	<6.0	<6.0	<6.0	<6.0	<6.0	<6.0	<6.0	<6.0	<6.0	<6.0	<6.0	--	<6.0	<6.0	<6.0	<6.0	<6.0	8,000	NE	8,000
Arsenic	**29.5**	**22.5**	**4.4**	**13.4**	<4.0	<3.0	**24.3**	<3.0	<4.0	<3.0	**6**	<3.0	<4.0	<3.0	--	<3.0	<4.0	<3.0	**5.7**	<3.0	900	NE	900
Barium	<50	<50	<50	<50	<50	<50	<50	<50	<50	**66.9**	<50	<50	<50	<50	--	<50	<50	<50	<50	<50	50,000	NE	50,000
Beryllium	<4.0	<1.0	<4.0	<1.0	<4.0	<1.0	<4.0	<1.0	<4.0	<1.0	<4.0	<1.0	<4.0	<1.0	--	<1.0	<4.0	<1.0	<4.0	<1.0	200	NE	200
Cadmium	<4.0	<3.0	<4.0	<3.0	<4.0	<3.0	<4.0	<3.0	<4.0	<3.0	<4.0	<3.0	<4.0	<3.0	--	<3.0	<4.0	<3.0	<4.0	<3.0	4	NE	4
Chromium	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	--	<10	<10	<10	<10	<10	300	NE	300
Lead	<5.0	<3.0	<5.0	<3.0	<5.0	<3.0	<5.0	<3.0	<5.0	**3.3**	<5.0	<3.0	<5.0	**8.5**	--	<3.0	<5.0	<3.0	<5.0	<3.0	10	NE	10
Mercury	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	--	<0.20	<0.20	<0.20	<0.20	<0.20	20	NE	20
Nickel	<40	<10	<40	<10	<40	<10	<40	<10	<40	<10	<40	<10	<40	<10	--	<10	<40	<10	<40	<10	200	NE	200
Selenium	<10	<10	<10	<10	<10	<10	<10	<10	**11.6**	**14.6**	<10	<10	**11.3**	**11.8**	--	<10	<10	**17.8**	<10	<10	100	NE	100
Silver	<5.0	<10	<5.0	<10	<5.0	<10	<5.0	<10	<5.0	<10	<5.0	<10	<5.0	<10	--	<10	<5.0	<10	<5.0	<10	7	NE	7
Thallium	<5.0	<2.0	<5.0	<2.0	<5.0	<2.0	<5.0	<2.0	<5.0	<2.0	<5.0	<2.0	<5.0	<2.0	--	<2.0	<5.0	<2.0	<5.0	<2.0	3,000	NE	3,000
Vanadium	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	--	<10	<10	<10	<10	<10	4,000	NE	4,000
Zinc	<20	<20	<20	<20	<20	<20	<20	<20	**26.1**	**293**	<20	<20	<20	<20	--	<20	<20	**26**	<20	<20	900	NE	900

NOTES:
- -- is not applicable or not analyzed
- µg/L is micrograms per liter.
- NE is not established
- BGS is below ground surface

MTBE is methyl tert butyl ether.
<2.0 is not detected at or above the laboratory reporting limit of 2.0 µg/L.
Analytes detected above the method reporting limit are in **Bold.**
Analytes detected above applicable MCP groundwater standards are in Red.

TABLE 3
SUMMARY OF SOIL ANALYTICAL DATA - VOCs

Maggiore Somerville
343-351 Summer Street
Somerville Massachusetts

Sample Date	August 8, 2016								August 12, 2016									March 28, 2017							MCP Method 1 Soil Standards (mg/kg)		MCP Reportable Concentrations (mg/kg)	MCP Method 3 Upper Concentration Limits (mg/kg)
Sample ID	B-101	B-102	B-103	B-104	MW-105	MW-106	MW-107	MW-108	S-1	S-2	S-3	S-4	S-5	S-6	S-7	S-8	Stockpile	PC-1 0-15' COMP	PC-1 0-5'	PC-1 10-15'	PC-1 5-10'	PC-2 0-15' COMP	PC-2 0-5'	PC-2 10-15'	S-1		RCS-1	
Depth (feet)	0-10	0-10	13	0-10	13.5	9	13	13.5	8-9	8	8.5	7-8	7	5	6	6	NA	0-15	0-5	10-15	5-10	0-15	0-5	10-15				
PID (ppmv)	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	225.1	BDL	BDL	BDL	BDL	BDL	BDL	BDL	GW-2	GW-3		
VOLATILE ORGANIC COMPOUNDS (mg/kg)																												
Acetone	**0.02**	<0.012	--	**0.02**	--	--	--	--	--	--	--	--	--	--	--	--	<3.3	**0.0542**	--	--	--	**0.0284**	--	--	50	400	6	10,000
Benzene	<0.00050	**0.001**	--	<0.00042	--	--	--	--	--	--	--	--	--	--	--	--	**0.523**	<0.00056	--	--	--	<0.00058	--	--	40	40	2	10,000
Bromobenzene	<0.0050	<0.0061	--	<0.0042	--	--	--	--	--	--	--	--	--	--	--	--	<1.7	<0.0056	--	--	--	<0.0058	--	--	NE	NE	100	NE
Bromochloromethane	<0.0050	<0.0061	--	<0.0042	--	--	--	--	--	--	--	--	--	--	--	--	<1.7	<0.0056	--	--	--	<0.0058	--	--	NE	NE	NE	NE
Bromodichloromethane	<0.0020	<0.0024	--	<0.0017	--	--	--	--	--	--	--	--	--	--	--	--	<0.66	<0.0022	--	--	--	<0.0023	--	--	0.1	30	0.1	5,000
Bromoform	<0.0020	<0.0024	--	<0.0017	--	--	--	--	--	--	--	--	--	--	--	--	<0.66	<0.0022	--	--	--	<0.0023	--	--	1	300	0.1	10,000
Bromomethane	<0.0020	<0.0024	--	<0.0017	--	--	--	--	--	--	--	--	--	--	--	--	<0.66	<0.011	--	--	--	<0.012	--	--	0.5	30	0.5	6,000
2-Butanone (MEK)	<0.010	<0.012	--	<0.0085	--	--	--	--	--	--	--	--	--	--	--	--	<3.3	<0.011	--	--	--	<0.012	--	--	50	400	4	10,000
n-Butylbenzene	<0.0050	<0.0061	--	<0.0042	--	--	--	--	--	--	--	--	--	--	--	--	**8.83**	<0.0056	--	--	--	<0.0058	--	--	NE	NE	NE	NE
sec-Butylbenzene	<0.0050	<0.0061	--	<0.0042	--	--	--	--	--	--	--	--	--	--	--	--	**2.59**	<0.0056	--	--	--	<0.0058	--	--	NE	NE	NE	NE
tert-Butylbenzene	<0.0050	<0.0061	--	<0.0042	--	--	--	--	--	--	--	--	--	--	--	--	<1.7	<0.0056	--	--	--	<0.0058	--	--	NE	NE	100	NE
Carbon disulfide	<0.0050	<0.0061	--	<0.0042	--	--	--	--	--	--	--	--	--	--	--	--	<1.7	<0.0056	--	--	--	<0.0058	--	--	NE	NE	100	NE
Carbon tetrachloride	<0.0020	<0.0024	--	<0.0017	--	--	--	--	--	--	--	--	--	--	--	--	<0.66	<0.0022	--	--	--	<0.0023	--	--	5	30	5	10,000
Chlorobenzene	<0.0020	<0.0024	--	<0.0017	--	--	--	--	--	--	--	--	--	--	--	--	<0.66	<0.0022	--	--	--	<0.0023	--	--	3	100	1	10,000
Chloroethane	<0.0050	<0.0061	--	<0.0042	--	--	--	--	--	--	--	--	--	--	--	--	<1.7	<0.011	--	--	--	<0.012	--	--	NE	NE	100	NE
Chloroform	<0.0020	<0.0024	--	<0.0017	--	--	--	--	--	--	--	--	--	--	--	--	<0.66	<0.0022	--	--	--	<0.0023	--	--	0.2	500	0.2	10,000
Chloromethane	<0.0050	<0.0061	--	<0.0042	--	--	--	--	--	--	--	--	--	--	--	--	<1.7	<0.0056	--	--	--	<0.0058	--	--	NE	NE	100	NE
o-Chlorotoluene	<0.0050	<0.0061	--	<0.0042	--	--	--	--	--	--	--	--	--	--	--	--	<1.7	<0.0056	--	--	--	<0.0058	--	--	NE	NE	100	NE
p-Chlorotoluene	<0.0050	<0.0061	--	<0.0042	--	--	--	--	--	--	--	--	--	--	--	--	<1.7	<0.0056	--	--	--	<0.0058	--	--	NE	NE	NE	NE
Di-Isopropyl ether	<0.0020	<0.0024	--	<0.0017	--	--	--	--	--	--	--	--	--	--	--	--	<0.66	<0.0022	--	--	--	<0.0023	--	--	NE	NE	100	NE
1,2-Dibromo-3-chloropropane	<0.0050	<0.0061	--	<0.0042	--	--	--	--	--	--	--	--	--	--	--	--	<1.7	<0.0056	--	--	--	<0.0058	--	--	NE	NE	10	NE
Dibromochloromethane	<0.0020	<0.0024	--	<0.0017	--	--	--	--	--	--	--	--	--	--	--	--	<0.66	<0.0056	--	--	--	<0.0058	--	--	0.03	20	0.005	5,000
1,2-Dibromoethane	<0.0020	<0.0024	--	<0.0017	--	--	--	--	--	--	--	--	--	--	--	--	<0.66	<0.0022	--	--	--	<0.0023	--	--	0.1	1	0.1	400
1,2-Dichlorobenzene	<0.0020	<0.0024	--	<0.0017	--	--	--	--	--	--	--	--	--	--	--	--	**0.877**	<0.0022	--	--	--	<0.0023	--	--	100	300	9	10,000
1,3-Dichlorobenzene	<0.0020	<0.0024	--	<0.0017	--	--	--	--	--	--	--	--	--	--	--	--	<0.66	<0.0022	--	--	--	<0.0023	--	--	100	100	3	5,000
1,4-Dichlorobenzene	<0.0020	<0.0024	--	<0.0017	--	--	--	--	--	--	--	--	--	--	--	--	<0.66	<0.0022	--	--	--	<0.0023	--	--	1	80	0.7	10,000
Dichlorodifluoromethane	<0.0020	<0.0024	--	<0.0017	--	--	--	--	--	--	--	--	--	--	--	--	<0.66	<0.0056	--	--	--	<0.0058	--	--	NE	NE	1000	NE
1,1-Dichloroethane	<0.0020	<0.0024	--	<0.0017	--	--	--	--	--	--	--	--	--	--	--	--	<0.66	<0.0022	--	--	--	<0.0023	--	--	9	500	0.4	10,000
1,2-Dichloroethane	<0.0020	<0.0024	--	<0.0017	--	--	--	--	--	--	--	--	--	--	--	--	<0.66	<0.0022	--	--	--	<0.0023	--	--	0.1	20	0.1	9,000
1,1-Dichloroethene	<0.0020	<0.0024	--	<0.0017	--	--	--	--	--	--	--	--	--	--	--	--	<0.66	<0.0022	--	--	--	<0.0023	--	--	40	500	3	10,000
cis-1,2-Dichloroethene	<0.0020	<0.0024	--	<0.0017	--	--	--	--	--	--	--	--	--	--	--	--	<0.66	<0.0022	--	--	--	<0.0023	--	--	0.1	100	0.1	5,000
trans-1,2-Dichloroethene	<0.0020	<0.0024	--	<0.0017	--	--	--	--	--	--	--	--	--	--	--	--	<0.66	<0.0022	--	--	--	<0.0023	--	--	1	500	1	10.000
1,2-Dichloropropane	<0.0020	<0.0024	--	<0.0017	--	--	--	--	--	--	--	--	--	--	--	--	<0.66	<0.0022	--	--	--	<0.0023	--	--	0.1	30	0.1	10,000
1,3-Dichloropropane	<0.0050	<0.0061	--	<0.0042	--	--	--	--	--	--	--	--	--	--	--	--	<1.7	<0.0056	--	--	--	<0.0058	--	--	NE	NE	500	NE
2,2-Dichloropropane	<0.0050	<0.0061	--	<0.0042	--	--	--	--	--	--	--	--	--	--	--	--	<1.7	<0.0056	--	--	--	<0.0058	--	--	NE	NE	NE	NE
1,1-Dichloropropene	<0.0050	<0.0061	--	<0.0042	--	--	--	--	--	--	--	--	--	--	--	--	<1.7	<0.0056	--	--	--	<0.0058	--	--	NE	NE	NE	NE
cis-1,3-Dichloropropene	<0.0020	<0.0024	--	<0.0017	--	--	--	--	--	--	--	--	--	--	--	--	<0.66	<0.0022	--	--	--	<0.0023	--	--	NE	NE	0.01	NE
trans-1,3-Dichloropropene	<0.0020	<0.0024	--	<0.0017	--	--	--	--	--	--	--	--	--	--	--	--	<0.66	<0.0022	--	--	--	<0.0023	--	--	NE	NE	0.01	NE
1,4-Dioxane	<0.13	<0.15	--	<0.11	--	--	--	--	--	--	--	--	--	--	--	--	<41	<0.14	--	--	--	<0.14	--	--	6	20	0.2	5,000
Ethyl Ether	<0.0050	<0.0061	--	<0.0042	--	--	--	--	--	--	--	--	--	--	--	--	<1.7	<0.0056	--	--	--	<0.0058	--	--	NE	NE	100	NE
Ethylbenzene	<0.0020	<0.0024	--	<0.0017	--	--	--	--	--	--	--	--	--	--	--	--	**13.1**	<0.0022	--	--	--	<0.0023	--	--	500	500	40	10,000
Hexachlorobutadiene	<0.0050	<0.0061	--	<0.0042	--	--	--	--	--	--	--	--	--	--	--	--	<1.7	<0.0056	--	--	--	<0.0058	--	--	30	30	30	1,000
2-Hexanone	<0.010	<0.012	--	<0.0085	--	--	--	--	--	--	--	--	--	--	--	--	<3.3	<0.0056	--	--	--	<0.0058	--	--	NE	NE	100	NE
Isopropylbenzene	<0.0050	<0.0061	--	<0.0042	--	--	--	--	--	--	--	--	--	--	--	--	**3.52**	<0.0056	--	--	--	<0.0058	--	--	NE	NE	1000	NE
p-Isopropyltoluene	<0.0050	<0.0061	--	<0.0042	--	--	--	--	--	--	--	--	--	--	--	--	**2.24**	<0.0056	--	--	--	<0.0058	--	--	NE	NE	100	NE
Methyl Tert Butyl Ether	<0.0020	<0.0024	--	<0.0017	--	--	--	--	--	--	--	--	--	--	--	--	<0.66	<0.0022	--	--	--	<0.0023	--	--	100	100	0.1	5,000
4-Methyl-2-pentanone (MIBK)	<0.0050	<0.0061	--	<0.0042	--	--	--	--	--	--	--	--	--	--	--	--	<1.7	<0.0056	--	--	--	<0.0058	--	--	50	400	0.4	10,000
Methylene bromide	<0.0050	<0.0061	--	<0.0042	--	--	--	--	--	--	--	--	--	--	--	--	<1.7	<0.0056	--	--	--	<0.0058	--	--	NE	NE	500	NE
Methylene chloride	<0.0020	<0.0024	--	<0.0017	--	--	--	--	--	--	--	--	--	--	--	--	<0.66	<0.0022	--	--	--	<0.0023	--	--	4	400	0.1	7,000
Naphthalene	<0.0050	<0.0061	--	<0.0042	--	--	--	--	--	--	--	--	--	--	--	--	**48.7**	0.0162	--	--	--	<0.0058	--	--	20	500	4	10,000
n-Propylbenzene	<0.0050	<0.0061	--	<0.0042	--	--	--	--	--	--	--	--	--	--	--	--	**13.5**	<0.0056	--	--	--	<0.0058	--	--	NE	NE	100	NE
Styrene	<0.0050	<0.0061	--	<0.0042	--	--	--	--	--	--	--	--	--	--	--	--	**1.85**	<0.0056	--	--	--	<0.0058	--	--	4	70	3	10.000
tert-Amyl Methyl Ether	<0.0050	<0.0061	--	<0.0042	--	--	--	--	--	--	--	--	--	--	--	--	<1.7	<0.0056	--	--	--	<0.0058	--	--	NE	NE	NE	NE
tert-Butyl Ethyl Ether	<0.0020	<0.0024	--	<0.0017	--	--	--	--	--	--	--	--	--	--	--	--	<0.66	<0.0022	--	--	--	<0.0023	--	--	NE	NE	NE	NE
1,1,1,2-Tetrachloroethane	<0.0050	<0.0061	--	<0.0042	--	--	--	--	--	--	--	--	--	--	--	--	<1.7	<0.0022	--	--	--	<0.0023	--	--	0.1	80	0.1	5,000
1,1,2,2-Tetrachloroethane	<0.0020	<0.0024	--	<0.0017	--	--	--	--	--	--	--	--	--	--	--	--	<0.66	<0.0056	--	--	--	<0.0058	--	--	0.02	10	0.005	4.000
Tetrachloroethene	<0.0020	<0.0024	--	<0.0017	--	--	--	--	--	--	--	--	--	--	--	--	<0.66	<0.0022	--	--	--	<0.0023	--	--	10	30	1	10,000
Tetrahydrofuran	<0.010	<0.012	--	<0.0085	--	--	--	--	--	--	--	--	--	--	--	--	<3.3	<0.011	--	--	--	<0.012	--	--	NE	NE	500	NE
Toluene	<0.0050	<0.0061	--	<0.0042	--	--	--	--	--	--	--	--	--	--	--	--	**13.5**	<0.0056	--	--	--	<0.0058	--	--	500	500	30	10,000
1,2,3-Trichlorobenzene	<0.0050	<0.0061	--	<0.0042	--	--	--	--	--	--	--	--	--	--	--	--	<1.7	<0.0056	--	--	--	<0.0058	--	--	NE	NE	NE	NE
1,2,4-Trichlorobenzene	<0.0050	<0.0061	--	<0.0042	--	--	--	--	--	--	--	--	--	--	--	--	<1.7	<0.0056	--	--	--	<0.0058	--	--	6	700	2	10,000
1,1,1-Trichloroethane	<0.0020	<0.0024	--	<0.0017	--	--	--	--	--	--	--	--	--	--	--	--	<0.66	<0.0022	--	--	--	<0.0023	--	--	500	500	30	10,000
1,1,2-Trichloroethane	<0.0020	<0.0024	--	<0.0017	--	--	--	--	--	--	--	--	--	--	--	--	<0.66	<0.0022	--	--	--	<0.0023	--	--	2	40	0.1	5,000
Trichloroethene	<0.0020	<0.0024	--	<0.0017	--	--	--	--	--	--	--	--	--	--	--	--	<0.66	<0.0022	--	--	--	<0.0023	--	--	0.3	30	0.3	600
Trichlorofluoromethane	<0.0020	<0.0024	--	<0.0017	--	--	--	--	--	--	--	--	--	--	--	--	<0.66	<0.0022	--	--	--	<0.0023	--	--	NE	NE	1000	NE
1,2,3-Trichloropropane	<0.0050	<0.0061	--	<0.0042	--	--	--	--	--	--	--	--	--	--	--	--	<1.7	<0.0056	--	--	--	<0.0058	--	--	NE	NE	100	NE
1,2,4-Trimethylbenzene	<0.0050	<0.0061	--	<0.0042	--	--	--	--	--	--	--	--	--	--	--	--	**127**	<0.0056	--	--	--	<0.0058	--	--	NE	NE	1000	NE
1,3,5-Trimethylbenzene	<0.0050	<0.0061	--	<0.0042	--	--	--	--	--	--	--	--	--	--	--	--	**29.9**	<0.0056	--	--	--	<0.0058	--	--	NE	NE	10	NE
Vinyl chloride	<0.0020	<0.0024	--	<0.0017	--	--	--	--	--	--	--	--	--	--	--	--	<0.66	<0.011	--	--	--	<0.012	--	--	0.7	1	0.7	600
m,p-Xylene	<0.0020	<0.0024	--	<0.0017	--	--	--	--	--	--	--	--	--	--	--	--	**60.6**	<0.0022	--	--	--	<0.0023	--	--	100	500	100	10,000
o-Xylene	<0.0020	<0.0024	--	<0.0017	--	--	--	--	--	--	--	--	--	--	--	--	**29.9**	<0.0022	--	--	--	<0.0023	--	--	100	500	100	10,000
Xylene (total)	<0.0020	<0.0024	--	<0.0017	--	--	--	--	--	--	--	--	--	--	--	--	**90.5**	<0.0022	--	--	--	<0.0023	--	--	100	500	100	10,000

NOTES:

-- is analysis not performed.
NE is not established
ND is not detected

mg/kg is milligrams per kilogram
mg/L is milligrams per liter
PID is photoionization detector
ppmv is parts per million by volume

VOC is volatile organic compound.
<2.0 indicates not detected at or above the laboratory reporting limit of 2.0 mg/kg
Analytes detected above the method reporting limit are in **Bold**
Analytes detected above MCP Reportable Concentrations are in Red

TABLE 3
SUMMARY OF SOIL ANALYTICAL DATA - VOCs

Maggiore Somerville
343-351 Summer Street
Somerville, Massachusetts

Sample Date	March 28, 2017																						MCP Method 1 Soil Standards (mg/kg)		MCP Reportable Concentrations	MCP Method 3 Upper Concentration Limits (mg/kg)
Sample ID	PC-2 5-10'	PC-3 0-15'	PC-3 0-5'	PC-3 10-15'	PC-3 5-10'	PC-4 0-15'	PC-4 0-5'	PC-4 10-15'	PC-4 5-10'	PC-5 0-15'	PC-5 0-5'	PC-5 10-15'	PC-5 5-10'	PC-6 0-15'	PC-6 0-5'	PC-6 10-15'	PC-6 5-10'	PC-7 0-15'	PC-7 0-5'	PC-7 10-15'	PC-7 5-10'	PC-8 0-15'	S-1		RCS-1	
Depth (feet)	5-10	0-15	0-5	10-15	5-10	0-15	0-5	10-15	5-10	0-15	0-5	10-15	5-10	0-15	0-5	10-15	5-10	0-15	0-5	10-15	5-10	0-15	GW-2	GW-3		
PID (ppmv)	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL				
VOLATILE ORGANIC COMPOUNDS (mg/kg)																										
Acetone	--	**0.0407**	--	--	--	**0.08**	--	--	--	**0.0375**	--	--	--	<0.011	--	--	--	**0.0242**	--	--	--	**0.0235**	50	400	6	10,000
Benzene	--	<0.00052	--	--	--	<0.00067	--	--	--	<0.00058	--	--	--	<0.00054	--	--	--	<0.00056	--	--	--	<0.00052	40	40	2	10,000
Bromobenzene	--	<0.0052	--	--	--	<0.0067	--	--	--	<0.0058	--	--	--	<0.0054	--	--	--	<0.0056	--	--	--	<0.0052	NE	NE	100	NE
Bromochloromethane	--	<0.0052	--	--	--	<0.0067	--	--	--	<0.0058	--	--	--	<0.0054	--	--	--	<0.0056	--	--	--	<0.0052	NE	NE	NE	NE
Bromodichloromethane	--	<0.0021	--	--	--	<0.0027	--	--	--	<0.0023	--	--	--	<0.0022	--	--	--	<0.0022	--	--	--	<0.0021	0.1	30	0.1	5,000
Bromoform	--	<0.0021	--	--	--	<0.0027	--	--	--	<0.0023	--	--	--	<0.0022	--	--	--	<0.0022	--	--	--	<0.0021	1	300	0.1	10,000
Bromomethane	--	<0.010	--	--	--	<0.13	--	--	--	<0.012	--	--	--	<0.011	--	--	--	<0.011	--	--	--	<0.010	0.5	30	0.5	6,000
2-Butanone (MEK)	--	<0.010	--	--	--	<0.13	--	--	--	<0.012	--	--	--	<0.011	--	--	--	<0.011	--	--	--	<0.010	50	400	4	10,000
n-Butylbenzene	--	<0.0052	--	--	--	<0.0067	--	--	--	<0.0058	--	--	--	<0.0054	--	--	--	<0.0056	--	--	--	<0.0052	NE	NE	NE	NE
sec-Butylbenzene	--	<0.0052	--	--	--	<0.0067	--	--	--	<0.0058	--	--	--	<0.0054	--	--	--	<0.0056	--	--	--	<0.0052	NE	NE	NE	NE
tert-Butylbenzene	--	<0.0052	--	--	--	<0.0067	--	--	--	<0.0058	--	--	--	<0.0054	--	--	--	<0.0056	--	--	--	<0.0052	NE	NE	100	NE
Carbon disulfide	--	<0.0052	--	--	--	<0.0067	--	--	--	<0.0058	--	--	--	<0.0054	--	--	--	<0.0056	--	--	--	<0.0052	NE	NE	100	NE
Carbon tetrachloride	--	<0.0021	--	--	--	<0.0027	--	--	--	<0.0023	--	--	--	<0.0022	--	--	--	<0.0022	--	--	--	<0.0021	5	30	5	10,000
Chlorobenzene	--	<0.0021	--	--	--	<0.0027	--	--	--	<0.0023	--	--	--	<0.0022	--	--	--	<0.0022	--	--	--	<0.0021	3	100	1	10,000
Chloroethane	--	<0.010	--	--	--	<0.13	--	--	--	<0.012	--	--	--	<0.011	--	--	--	<0.011	--	--	--	<0.010	NE	NE	100	NE
Chloroform	--	<0.0021	--	--	--	<0.0027	--	--	--	<0.0023	--	--	--	<0.0022	--	--	--	<0.0022	--	--	--	<0.0021	0.2	500	0.2	10,000
Chloromethane	--	<0.0052	--	--	--	<0.0067	--	--	--	<0.0058	--	--	--	<0.0054	--	--	--	<0.0056	--	--	--	<0.0052	NE	NE	100	NE
o-Chlorotoluene	--	<0.0052	--	--	--	<0.0067	--	--	--	<0.0058	--	--	--	<0.0054	--	--	--	<0.0056	--	--	--	<0.0052	NE	NE	100	NE
p-Chlorotoluene	--	<0.0052	--	--	--	<0.0067	--	--	--	<0.0058	--	--	--	<0.0054	--	--	--	<0.0056	--	--	--	<0.0052	NE	NE	NE	NE
Di-isopropyl ether	--	<0.0021	--	--	--	<0.0027	--	--	--	<0.0023	--	--	--	<0.0022	--	--	--	<0.0022	--	--	--	<0.0021	NE	NE	100	NE
1,2-Dibromo-3-chloropropane	--	<0.0052	--	--	--	<0.0067	--	--	--	<0.0058	--	--	--	<0.0054	--	--	--	<0.0056	--	--	--	<0.0052	NE	NE	10	NE
Dibromochloromethane	--	<0.0052	--	--	--	<0.0067	--	--	--	<0.0058	--	--	--	<0.0054	--	--	--	<0.0056	--	--	--	<0.0052	0.03	20	0.005	5,000
1,2-Dibromoethane	--	<0.0021	--	--	--	<0.0027	--	--	--	<0.0023	--	--	--	<0.0022	--	--	--	<0.0022	--	--	--	<0.0021	0.1	1	0.1	400
1,2-Dichlorobenzene	--	<0.0021	--	--	--	<0.0027	--	--	--	<0.0023	--	--	--	<0.0022	--	--	--	<0.0022	--	--	--	<0.0021	100	300	9	10,000
1,3-Dichlorobenzene	--	<0.0021	--	--	--	<0.0027	--	--	--	<0.0023	--	--	--	<0.0022	--	--	--	<0.0022	--	--	--	<0.0021	100	100	3	5,000
1,4-Dichlorobenzene	--	<0.0021	--	--	--	<0.0027	--	--	--	<0.0023	--	--	--	<0.0022	--	--	--	<0.0022	--	--	--	<0.0021	1	80	0.7	10,000
Dichlorodifluoromethane	--	<0.0052	--	--	--	<0.0067	--	--	--	<0.0058	--	--	--	<0.0054	--	--	--	<0.0056	--	--	--	<0.0052	NE	NE	1000	NE
1,1-Dichloroethane	--	<0.0021	--	--	--	<0.0027	--	--	--	<0.0023	--	--	--	<0.0022	--	--	--	<0.0022	--	--	--	<0.0021	9	500	0.4	10,000
1,2-Dichloroethane	--	<0.0021	--	--	--	<0.0027	--	--	--	<0.0023	--	--	--	<0.0022	--	--	--	<0.0022	--	--	--	<0.0021	0.1	20	0.1	9,000
1,1-Dichloroethene	--	<0.0021	--	--	--	<0.0027	--	--	--	<0.0023	--	--	--	<0.0022	--	--	--	<0.0022	--	--	--	<0.0021	40	500	3	10,000
cis-1,2-Dichloroethene	--	<0.0021	--	--	--	<0.0027	--	--	--	<0.0023	--	--	--	<0.0022	--	--	--	<0.0022	--	--	--	<0.0021	0.1	100	0.1	5,000
trans-1,2-Dichloroethene	--	<0.0021	--	--	--	<0.0027	--	--	--	<0.0023	--	--	--	<0.0022	--	--	--	<0.0022	--	--	--	<0.0021	1	500	1	10,000
1,2-Dichloropropane	--	<0.0021	--	--	--	<0.0027	--	--	--	<0.0023	--	--	--	<0.0022	--	--	--	<0.0022	--	--	--	<0.0021	0.1	30	0.1	10,000
1,3-Dichloropropane	--	<0.0052	--	--	--	<0.0067	--	--	--	<0.0058	--	--	--	<0.0054	--	--	--	<0.0056	--	--	--	<0.0052	NE	NE	500	NE
2,2-Dichloropropane	--	<0.0052	--	--	--	<0.0067	--	--	--	<0.0058	--	--	--	<0.0054	--	--	--	<0.0056	--	--	--	<0.0052	NE	NE	NE	NE
1,1-Dichloropropene	--	<0.0052	--	--	--	<0.0067	--	--	--	<0.0058	--	--	--	<0.0054	--	--	--	<0.0056	--	--	--	<0.0052	NE	NE	NE	NE
cis-1,3-Dichloropropene	--	<0.0021	--	--	--	<0.0027	--	--	--	<0.0023	--	--	--	<0.0022	--	--	--	<0.0022	--	--	--	<0.0021	NE	NE	0.01	NE
trans-1,3-Dichloropropene	--	<0.0021	--	--	--	<0.0027	--	--	--	<0.0023	--	--	--	<0.0022	--	--	--	<0.0022	--	--	--	<0.0021	NE	NE	0.01	NE
1,4-Dioxane	--	<0.13	--	--	--	<0.17	--	--	--	<0.14	--	--	--	<0.13	--	--	--	<0.14	--	--	--	<0.13	6	20	0.2	5,000
Ethyl Ether	--	<0.0052	--	--	--	<0.0067	--	--	--	<0.0058	--	--	--	<0.0054	--	--	--	<0.0056	--	--	--	<0.0052	NE	NE	100	NE
Ethylbenzene	--	**0.0027**	--	--	--	<0.0027	--	--	--	**0.0031**	--	--	--	<0.0022	--	--	--	<0.0022	--	--	--	<0.0021	500	500	40	10,000
Hexachlorobutadiene	--	<0.0052	--	--	--	<0.0067	--	--	--	<0.0058	--	--	--	<0.0054	--	--	--	<0.0056	--	--	--	<0.0052	30	30	30	1,000
2-Hexanone	--	<0.0052	--	--	--	<0.0067	--	--	--	<0.0058	--	--	--	<0.0054	--	--	--	<0.0056	--	--	--	<0.0052	NE	NE	100	NE
Isopropylbenzene	--	<0.0052	--	--	--	<0.0067	--	--	--	<0.0058	--	--	--	<0.0054	--	--	--	<0.0056	--	--	--	<0.0052	NE	NE	1000	NE
p-Isopropyltoluene	--	<0.0052	--	--	--	<0.0067	--	--	--	<0.0058	--	--	--	<0.0054	--	--	--	<0.0056	--	--	--	<0.0052	NE	NE	100	NE
Methyl Tert Butyl Ether	--	<0.0021	--	--	--	<0.0027	--	--	--	<0.0023	--	--	--	<0.0022	--	--	--	<0.0022	--	--	--	<0.0021	100	100	0.1	5,000
4-Methyl-2-pentanone (MIBK)	--	<0.0052	--	--	--	<0.0067	--	--	--	<0.0058	--	--	--	<0.0054	--	--	--	<0.0056	--	--	--	<0.0052	50	400	0.4	10,000
Methylene bromide	--	<0.0052	--	--	--	<0.0067	--	--	--	<0.0058	--	--	--	<0.0054	--	--	--	<0.0056	--	--	--	<0.0052	NE	NE	500	NE
Methylene chloride	--	<0.0021	--	--	--	<0.0027	--	--	--	<0.0023	--	--	--	<0.0022	--	--	--	<0.0022	--	--	--	<0.0021	4	400	0.1	7,000
Naphthalene	--	<0.0052	--	--	--	<0.0067	--	--	--	<0.0058	--	--	--	**0.0339**	--	--	--	<0.0056	--	--	--	<0.0052	20	500	4	10,000
n-Propylbenzene	--	<0.0052	--	--	--	<0.0067	--	--	--	<0.0058	--	--	--	<0.0054	--	--	--	<0.0056	--	--	--	<0.0052	NE	NE	100	NE
Styrene	--	<0.0052	--	--	--	<0.0067	--	--	--	<0.0058	--	--	--	<0.0054	--	--	--	<0.0056	--	--	--	<0.0052	4	70	3	10,000
tert-Amyl Methyl Ether	--	<0.0052	--	--	--	<0.0067	--	--	--	<0.0058	--	--	--	<0.0054	--	--	--	<0.0056	--	--	--	<0.0052	NE	NE	NE	NE
tert-Butyl Ethyl Ether	--	<0.0021	--	--	--	<0.0027	--	--	--	<0.0023	--	--	--	<0.0022	--	--	--	<0.0022	--	--	--	<0.0021	NE	NE	NE	NE
1,1,1,2-Tetrachloroethane	--	<0.0021	--	--	--	<0.0027	--	--	--	<0.0023	--	--	--	<0.0022	--	--	--	<0.0022	--	--	--	<0.0021	0.1	80	0.1	5,000
1,1,2,2-Tetrachloroethane	--	<0.0052	--	--	--	<0.0067	--	--	--	<0.0058	--	--	--	<0.0054	--	--	--	<0.0056	--	--	--	<0.0052	0.02	10	0.005	4,000
Tetrachloroethene	--	<0.0021	--	--	--	<0.0027	--	--	--	<0.0023	--	--	--	<0.0022	--	--	--	<0.0022	--	--	--	<0.0021	10	30	1	10,000
Tetrahydrofuran	--	<0.010	--	--	--	<0.013	--	--	--	<0.012	--	--	--	<0.011	--	--	--	<0.011	--	--	--	<0.010	NE	NE	500	NE
Toluene	--	<0.0052	--	--	--	<0.0067	--	--	--	<0.0058	--	--	--	<0.0054	--	--	--	<0.0056	--	--	--	<0.0052	500	500	30	10,000
1,2,3-Trichlorobenzene	--	<0.0052	--	--	--	<0.0067	--	--	--	<0.0058	--	--	--	<0.0054	--	--	--	<0.0056	--	--	--	<0.0052	NE	NE	NE	NE
1,2,4-Trichlorobenzene	--	<0.0052	--	--	--	<0.0067	--	--	--	<0.0058	--	--	--	<0.0054	--	--	--	<0.0056	--	--	--	<0.0052	6	700	2	10,000
1,1,1-Trichloroethane	--	<0.0021	--	--	--	<0.0027	--	--	--	<0.0023	--	--	--	<0.0022	--	--	--	<0.0022	--	--	--	<0.0021	500	500	30	10,000
1,1,2-Trichloroethane	--	<0.0021	--	--	--	<0.0027	--	--	--	<0.0023	--	--	--	<0.0022	--	--	--	<0.0022	--	--	--	<0.0021	2	40	0.1	5,000
Trichloroethene	--	<0.0021	--	--	--	<0.0027	--	--	--	<0.0023	--	--	--	<0.0022	--	--	--	<0.0022	--	--	--	<0.0021	0.3	30	0.3	600
Trichlorofluoromethane	--	<0.0021	--	--	--	<0.0027	--	--	--	<0.0023	--	--	--	<0.0022	--	--	--	<0.0022	--	--	--	<0.0021	NE	NE	1000	NE
1,2,3-Trichloropropane	--	<0.0052	--	--	--	<0.0067	--	--	--	<0.0058	--	--	--	<0.0054	--	--	--	<0.0056	--	--	--	<0.0052	NE	NE	100	NE
1,2,4-Trimethylbenzene	--	<0.0052	--	--	--	<0.0067	--	--	--	<0.0058	--	--	--	<0.0054	--	--	--	<0.0056	--	--	--	<0.0052	NE	NE	1000	NE
1,3,5-Trimethylbenzene	--	<0.0052	--	--	--	<0.0067	--	--	--	<0.0058	--	--	--	<0.0054	--	--	--	<0.0056	--	--	--	<0.0052	NE	NE	10	NE
Vinyl chloride	--	<0.010	--	--	--	<0.013	--	--	--	<0.012	--	--	--	<0.011	--	--	--	<0.011	--	--	--	<0.010	0.7	1	0.7	600
m,p-Xylene	--	**0.0144**	--	--	--	<0.0027	--	--	--	**0.0159**	--	--	--	<0.0022	--	--	--	<0.0022	--	--	--	<0.0021	100	500	100	10,000
o-Xylene	--	**0.0067**	--	--	--	<0.0027	--	--	--	**0.0066**	--	--	--	<0.0022	--	--	--	<0.0022	--	--	--	<0.0021	100	500	100	10,000
Xylene (total)	--	**0.0211**	--	--	--	<0.0027	--	--	--	**0.0225**	--	--	--	<0.0022	--	--	--	<0.0022	--	--	--	<0.0021	100	500	100	10,000

NOTES:

-- is analysis not performed	mg/kg is milligrams per kilogram	VOC is volatile organic compound
NE is not established	mg/L is milligrams per liter	<2.0 indicates not detected at or above the laboratory reporting limit of 2.0 mg/kg
ND is not detected	PID is photoionization detector	Analytes detected above the method reporting limit are in **Bold**
	ppmv is parts per million by volume	Analytes detected above MCP Reportable Concentrations are in Red

TABLE 3
SUMMARY OF SOIL ANALYTICAL DATA - VOCs

Maggiore Somerville
343-351 Summer Street
Somerville, Massachusetts

Sample Date	March 28, 2017																						MCP Method 1 Soil Standards (mg/kg)		MCP Reportable Concentrations	MCP Method 3 Upper Concentration Limits (mg/kg)
Sample ID	PC-8 0-5'	PC-8 10-15'	PC-8 5-10'	PC-9 0-15'	PC-9 0-5'	PC-9 10-15'	PC-9 5-10'	PC-10 0-15'	PC-10 0-5'	PC-10 10-15'	PC-10 5-10'	PC-11 0-15'	PC-11 0-5'	PC-11 10-15'	PC-11 5-10'	PC-12 0-15'	PC-12 0-5'	PC-12 10-15'	PC-12 5-10'	PC-13 0-15	PC-13 0-5'	PC-13 10-15'	S-1		RCS-1	
Depth (feet)	0-5	10-15	5-10	0-15	0-5	10-15	5-10	0-15	0-5	10-15	5-10	0-15	0-5	10-15	5-10	0-15	0-5	10-15	5-10	0-15	0-5	10-15	GW-2	GW-3		
PID (ppmv)	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL				
VOLATILE ORGANIC COMPOUNDS (mg/kg)																										
Acetone	--	--	--	<0.0096	--	--	--	**0.044**	--	--	--	**0.0338**	--	--	--	**0.113**	--	--	--	<0.011	--	--	50	400	6	10,000
Benzene	--	--	--	<0.00048	--	--	--	<0.00053	--	--	--	<0.00060	--	--	--	<0.00057	--	--	--	<0.00057	--	--	40	40	2	10,000
Bromobenzene	--	--	--	<0.0048	--	--	--	<0.0053	--	--	--	<0.0060	--	--	--	<0.0057	--	--	--	<0.0057	--	--	NE	NE	100	NE
Bromochloromethane	--	--	--	<0.0048	--	--	--	<0.0053	--	--	--	<0.0060	--	--	--	<0.0057	--	--	--	<0.0057	--	--	NE	NE	NE	NE
Bromodichloromethane	--	--	--	<0.0019	--	--	--	<0.0021	--	--	--	<0.0024	--	--	--	<0.0023	--	--	--	<0.0023	--	--	0.1	30	0.1	5,000
Bromoform	--	--	--	<0.0019	--	--	--	<0.0021	--	--	--	<0.0024	--	--	--	<0.0023	--	--	--	<0.0023	--	--	1	300	0.1	10,000
Bromomethane	--	--	--	<0.0096	--	--	--	<0.011	--	--	--	<0.012	--	--	--	<0.011	--	--	--	<0.011	--	--	0.5	30	0.5	6,000
2-Butanone (MEK)	--	--	--	<0.0096	--	--	--	<0.011	--	--	--	<0.012	--	--	--	<0.011	--	--	--	<0.011	--	--	50	400	4	10,000
n-Butylbenzene	--	--	--	<0.0048	--	--	--	<0.0053	--	--	--	<0.0060	--	--	--	<0.0057	--	--	--	<0.0057	--	--	NE	NE	NE	NE
sec-Butylbenzene	--	--	--	<0.0048	--	--	--	<0.0053	--	--	--	<0.0060	--	--	--	<0.0057	--	--	--	<0.0057	--	--	NE	NE	NE	NE
tert-Butylbenzene	--	--	--	<0.0048	--	--	--	<0.0053	--	--	--	<0.0060	--	--	--	<0.0057	--	--	--	<0.0057	--	--	NE	NE	100	NE
Carbon disulfide	--	--	--	<0.0048	--	--	--	<0.0053	--	--	--	<0.0060	--	--	--	<0.0057	--	--	--	<0.0057	--	--	NE	NE	100	NE
Carbon tetrachloride	--	--	--	<0.0019	--	--	--	<0.0021	--	--	--	<0.0024	--	--	--	<0.0023	--	--	--	<0.0023	--	--	5	30	5	10,000
Chlorobenzene	--	--	--	<0.0019	--	--	--	<0.0021	--	--	--	<0.0024	--	--	--	<0.0023	--	--	--	<0.0023	--	--	3	100	1	10,000
Chloroethane	--	--	--	<0.0096	--	--	--	<0.011	--	--	--	<0.012	--	--	--	<0.011	--	--	--	<0.011	--	--	NE	NE	100	NE
Chloroform	--	--	--	<0.0019	--	--	--	<0.0021	--	--	--	<0.0024	--	--	--	<0.0023	--	--	--	<0.0023	--	--	0.2	500	0.2	10,000
Chloromethane	--	--	--	<0.0048	--	--	--	<0.0053	--	--	--	<0.0060	--	--	--	<0.0057	--	--	--	<0.0057	--	--	NE	NE	100	NE
o-Chlorotoluene	--	--	--	<0.0048	--	--	--	<0.0053	--	--	--	<0.0060	--	--	--	<0.0057	--	--	--	<0.0057	--	--	NE	NE	100	NE
p-Chlorotoluene	--	--	--	<0.0048	--	--	--	<0.0053	--	--	--	<0.0060	--	--	--	<0.0057	--	--	--	<0.0057	--	--	NE	NE	NE	NE
Di-Isopropyl ether	--	--	--	<0.0019	--	--	--	<0.0021	--	--	--	<0.0024	--	--	--	<0.0023	--	--	--	<0.0023	--	--	NE	NE	100	NE
1,2-Dibromo-3-chloropropane	--	--	--	<0.0048	--	--	--	<0.0053	--	--	--	<0.0060	--	--	--	<0.0057	--	--	--	<0.0057	--	--	NE	NE	10	NE
Dibromochloromethane	--	--	--	<0.0048	--	--	--	<0.0053	--	--	--	<0.0060	--	--	--	<0.0057	--	--	--	<0.0057	--	--	0.03	20	0.005	5,000
1,2-Dibromoethane	--	--	--	<0.0019	--	--	--	<0.0021	--	--	--	<0.0024	--	--	--	<0.0023	--	--	--	<0.0023	--	--	0.1	1	0.1	400
1,2-Dichlorobenzene	--	--	--	<0.0019	--	--	--	<0.0021	--	--	--	<0.0024	--	--	--	<0.0023	--	--	--	<0.0023	--	--	100	300	9	10,000
1,3-Dichlorobenzene	--	--	--	<0.0019	--	--	--	<0.0021	--	--	--	<0.0024	--	--	--	<0.0023	--	--	--	<0.0023	--	--	100	100	3	5,000
1,4-Dichlorobenzene	--	--	--	<0.0019	--	--	--	<0.0021	--	--	--	<0.0024	--	--	--	<0.0023	--	--	--	<0.0023	--	--	1	80	0.7	10,000
Dichlorodifluoromethane	--	--	--	<0.0048	--	--	--	<0.0053	--	--	--	<0.0060	--	--	--	<0.0057	--	--	--	<0.0057	--	--	NE	NE	1000	NE
1,1-Dichloroethane	--	--	--	<0.0019	--	--	--	<0.0021	--	--	--	<0.0024	--	--	--	<0.0023	--	--	--	<0.0023	--	--	9	500	0.4	10,000
1,2-Dichloroethane	--	--	--	<0.0019	--	--	--	<0.0021	--	--	--	<0.0024	--	--	--	<0.0023	--	--	--	<0.0023	--	--	0.1	20	0.1	9,000
1,1-Dichloroethene	--	--	--	<0.0019	--	--	--	<0.0021	--	--	--	<0.0024	--	--	--	<0.0023	--	--	--	<0.0023	--	--	40	500	3	10,000
cis-1,2-Dichloroethene	--	--	--	<0.0019	--	--	--	<0.0021	--	--	--	<0.0024	--	--	--	<0.0023	--	--	--	<0.0023	--	--	0.1	100	0.1	5,000
trans-1,2-Dichloroethene	--	--	--	<0.0019	--	--	--	<0.0021	--	--	--	<0.0024	--	--	--	<0.0023	--	--	--	<0.0023	--	--	1	500	1	10,000
1,2-Dichloropropane	--	--	--	<0.0019	--	--	--	<0.0021	--	--	--	<0.0024	--	--	--	<0.0023	--	--	--	<0.0023	--	--	0.1	30	0.1	10,000
1,3-Dichloropropane	--	--	--	<0.0048	--	--	--	<0.0053	--	--	--	<0.0060	--	--	--	<0.0057	--	--	--	<0.0057	--	--	NE	NE	500	NE
2,2-Dichloropropane	--	--	--	<0.0048	--	--	--	<0.0053	--	--	--	<0.0060	--	--	--	<0.0057	--	--	--	<0.0057	--	--	NE	NE	NE	NE
1,1-Dichloropropene	--	--	--	<0.0048	--	--	--	<0.0053	--	--	--	<0.0060	--	--	--	<0.0057	--	--	--	<0.0057	--	--	NE	NE	NE	NE
cis-1,3-Dichloropropene	--	--	--	<0.0019	--	--	--	<0.0021	--	--	--	<0.0024	--	--	--	<0.0023	--	--	--	<0.0023	--	--	NE	NE	0.01	NE
trans-1,3-Dichloropropene	--	--	--	<0.0019	--	--	--	<0.0021	--	--	--	<0.0024	--	--	--	<0.0023	--	--	--	<0.0023	--	--	NE	NE	0.01	NE
1,4-Dioxane	--	--	--	<0.12	--	--	--	<0.13	--	--	--	<0.15	--	--	--	<0.14	--	--	--	<0.14	--	--	6	20	0.2	5,000
Ethyl Ether	--	--	--	<0.0048	--	--	--	<0.0053	--	--	--	<0.0060	--	--	--	<0.0057	--	--	--	<0.0057	--	--	NE	NE	100	NE
Ethylbenzene	--	--	--	<0.0019	--	--	--	<0.0021	--	--	--	<0.0024	--	--	--	<0.0023	--	--	--	<0.0023	--	--	500	500	40	10,000
Hexachlorobutadiene	--	--	--	<0.0048	--	--	--	<0.0053	--	--	--	<0.0060	--	--	--	<0.0057	--	--	--	<0.0057	--	--	30	30	30	1,000
2-Hexanone	--	--	--	<0.0048	--	--	--	<0.0053	--	--	--	<0.0060	--	--	--	<0.0057	--	--	--	<0.0057	--	--	NE	NE	100	NE
Isopropylbenzene	--	--	--	<0.0048	--	--	--	<0.0053	--	--	--	<0.0060	--	--	--	<0.0057	--	--	--	<0.0057	--	--	NE	NE	1000	NE
p-Isopropyltoluene	--	--	--	<0.0048	--	--	--	<0.0053	--	--	--	<0.0060	--	--	--	<0.0057	--	--	--	<0.0057	--	--	NE	NE	100	NE
Methyl Tert Butyl Ether	--	--	--	<0.0019	--	--	--	<0.0021	--	--	--	<0.0024	--	--	--	<0.0023	--	--	--	<0.0023	--	--	100	100	0.1	5,000
4-Methyl-2-pentanone (MIBK)	--	--	--	<0.0048	--	--	--	<0.0053	--	--	--	<0.0060	--	--	--	<0.0057	--	--	--	<0.0057	--	--	50	400	0.4	10,000
Methylene bromide	--	--	--	<0.0048	--	--	--	<0.0053	--	--	--	<0.0060	--	--	--	<0.0057	--	--	--	<0.0057	--	--	NE	NE	500	NE
Methylene chloride	--	--	--	<0.0019	--	--	--	<0.0021	--	--	--	<0.0024	--	--	--	<0.0023	--	--	--	<0.0023	--	--	4	400	0.1	7,000
Naphthalene	--	--	--	<0.0048	--	--	--	<0.0053	--	--	--	<0.0060	--	--	--	<0.0057	--	--	--	<0.0057	--	--	20	500	4	10,000
n-Propylbenzene	--	--	--	<0.0048	--	--	--	<0.0053	--	--	--	<0.0060	--	--	--	<0.0057	--	--	--	<0.0057	--	--	NE	NE	100	NE
Styrene	--	--	--	<0.0048	--	--	--	<0.0053	--	--	--	<0.0060	--	--	--	<0.0057	--	--	--	<0.0057	--	--	4	70	3	10,000
tert-Amyl Methyl Ether	--	--	--	<0.0048	--	--	--	<0.0053	--	--	--	<0.0060	--	--	--	<0.0057	--	--	--	<0.0057	--	--	NE	NE	NE	NE
tert-Butyl Ethyl Ether	--	--	--	<0.0019	--	--	--	<0.0021	--	--	--	<0.0024	--	--	--	<0.0023	--	--	--	<0.0023	--	--	NE	NE	NE	NE
1,1,1,2-Tetrachloroethane	--	--	--	<0.0019	--	--	--	<0.0021	--	--	--	<0.0024	--	--	--	<0.0023	--	--	--	<0.0023	--	--	0.1	80	0.1	5,000
1,1,2,2-Tetrachloroethane	--	--	--	<0.0048	--	--	--	<0.0053	--	--	--	<0.0060	--	--	--	<0.0057	--	--	--	<0.0057	--	--	0.02	10	0.005	4,000
Tetrachloroethene	--	--	--	<0.0019	--	--	--	<0.0021	--	--	--	<0.0024	--	--	--	<0.0023	--	--	--	<0.0023	--	--	10	30	1	10,000
Tetrahydrofuran	--	--	--	<0.0096	--	--	--	<0.011	--	--	--	<0.012	--	--	--	<0.011	--	--	--	<0.011	--	--	NE	NE	500	NE
Toluene	--	--	--	<0.0048	--	--	--	<0.0053	--	--	--	<0.0060	--	--	--	<0.0057	--	--	--	<0.0057	--	--	500	500	30	10,000
1,2,3-Trichlorobenzene	--	--	--	<0.0048	--	--	--	<0.0053	--	--	--	<0.0060	--	--	--	<0.0057	--	--	--	<0.0057	--	--	NE	NE	NE	NE
1,2,4-Trichlorobenzene	--	--	--	<0.0048	--	--	--	<0.0053	--	--	--	<0.0060	--	--	--	<0.0057	--	--	--	<0.0057	--	--	6	700	2	10,000
1,1,1-Trichloroethane	--	--	--	<0.0019	--	--	--	<0.0021	--	--	--	<0.0024	--	--	--	<0.0023	--	--	--	<0.0023	--	--	500	500	30	10,000
1,1,2-Trichloroethane	--	--	--	<0.0019	--	--	--	<0.0021	--	--	--	<0.0024	--	--	--	<0.0023	--	--	--	<0.0023	--	--	2	40	0.1	5,000
Trichloroethene	--	--	--	<0.0019	--	--	--	<0.0021	--	--	--	<0.0024	--	--	--	<0.0023	--	--	--	<0.0023	--	--	0.3	30	0.3	600
Trichlorofluoromethane	--	--	--	<0.0019	--	--	--	<0.0021	--	--	--	<0.0024	--	--	--	<0.0023	--	--	--	<0.0023	--	--	NE	NE	1000	NE
1,2,3-Trichloropropane	--	--	--	<0.0048	--	--	--	<0.0053	--	--	--	<0.0060	--	--	--	<0.0057	--	--	--	<0.0057	--	--	NE	NE	100	NE
1,2,4-Trimethylbenzene	--	--	--	<0.0048	--	--	--	<0.0053	--	--	--	<0.0060	--	--	--	<0.0057	--	--	--	<0.0057	--	--	NE	NE	1000	NE
1,3,5-Trimethylbenzene	--	--	--	<0.0048	--	--	--	<0.0053	--	--	--	<0.0060	--	--	--	<0.0057	--	--	--	<0.0057	--	--	NE	NE	10	NE
Vinyl chloride	--	--	--	<0.0096	--	--	--	<0.011	--	--	--	<0.012	--	--	--	<0.011	--	--	--	<0.011	--	--	0.7	1	0.7	600
m,p-Xylene	--	--	--	<0.0019	--	--	--	<0.0021	--	--	--	<0.0024	--	--	--	<0.0023	--	--	--	**0.0039**	--	--	100	500	100	10,000
o-Xylene	--	--	--	<0.0019	--	--	--	<0.0021	--	--	--	<0.0024	--	--	--	<0.0023	--	--	--	<0.0023	--	--	100	500	100	10,000
Xylene (total)	--	--	--	<0.0019	--	--	--	<0.0021	--	--	--	<0.0024	--	--	--	<0.0023	--	--	--	**0.0055**	--	--	100	500	100	10,000

NOTES:

-- is analysis not performed	mg/kg is milligrams per kilogram.	VOC is volatile organic compound.
NE is not established	mg/L is milligrams per liter	<2.0 indicates not detected at or above the laboratory reporting limit of 2.0 mg/kg.
ND is not detected	PID is photoionization detector	Analytes detected above the method reporting limit are in **Bold**.
	ppmv is parts per million by volume	Analytes detected above MCP Reportable Concentrations are in Red.

TABLE 3
SUMMARY OF SOIL ANALYTICAL DATA - VOCs

Maggiore Somerville
343-351 Summer Street
Somerville Massachusetts

Sample Date	March 28, 2017																									MCP Method 1 Soil Standards (mg/kg)		MCP Reportable Concentrations	MCP Method 3 Upper Concentrati
Sample ID	PC-13 5-10'	PC-14 0-15'	PC-14 0-5'	PC-14 10-	PC-14 5-10'	PC-15 0-15'	PC-15 0-5'	PC-15 10-15'	PC-15 5-10'	PC-16 0-5'	PC-16A 0-5'	PC-16B 0-5'	PC-16C 0-5'	PC-17 0-5'	PC-17A 0-5'	PC-17B 0-5'	PC-17C 0-5'	PC-18 0-5'	PC-18A 0-5'	PC-18B 0-5'	PC-18C 0-5'	PC-19 0-5'	PC-19A 0-5'	PC-19B 0-5'	PC-19C 0-5'	S-1		RCS-1	
Depth (feet)	5-10	0-15	0-5	10-15	5-10	0-15	0-5	10-15	5-10	0-5	0-5	0-5	0-5	0-5	0-5	0-5	0-5	0-5	0-5	0-5	0-5	0-5	0-5	0-5	0-5	GW-2	GW-3		
PID (ppmv)	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL				
VOLATILE ORGANIC COMPOUNDS (mg/kg)																													
Acetone	--	**0.0377**	--	--	--	<0.013	--	--	--	**0.0587**	--	--	--	**0.0686**	--	--	--	<0.011	--	--	--	<0.0088	--	--	--	50	400	6	10,000
Benzene	--	<0.00057	--	--	--	<0.00067	--	--	--	<0.00061	--	--	--	<0.00058	--	--	--	<0.00055	--	--	--	<0.00044	--	--	--	40	40	2	10,000
Bromobenzene	--	<0.0057	--	--	--	<0.0067	--	--	--	<0.0061	--	--	--	<0.0058	--	--	--	<0.0055	--	--	--	<0.0044	--	--	--	NE	NE	100	NE
Bromochloromethane	--	<0.0057	--	--	--	<0.0067	--	--	--	<0.0061	--	--	--	<0.0058	--	--	--	<0.0055	--	--	--	<0.0044	--	--	--	NE	NE	NE	NE
Bromodichloromethane	--	<0.0023	--	--	--	<0.0027	--	--	--	<0.0025	--	--	--	<0.0023	--	--	--	<0.0022	--	--	--	<0.0018	--	--	--	0.1	30	0.1	5,000
Bromoform	--	<0.0023	--	--	--	<0.0027	--	--	--	<0.0025	--	--	--	<0.0023	--	--	--	<0.0022	--	--	--	<0.0018	--	--	--	1	300	0.1	10,000
Bromomethane	--	<0.011	--	--	--	<0.013	--	--	--	<0.012	--	--	--	<0.012	--	--	--	<0.011	--	--	--	<0.0088	--	--	--	0.5	30	0.5	6,000
2-Butanone (MEK)	--	<0.011	--	--	--	<0.013	--	--	--	<0.012	--	--	--	<0.012	--	--	--	<0.011	--	--	--	<0.0088	--	--	--	50	400	4	10,000
n-Butylbenzene	--	<0.0057	--	--	--	<0.0067	--	--	--	<0.0061	--	--	--	<0.0058	--	--	--	<0.0055	--	--	--	<0.0044	--	--	--	NE	NE	NE	NE
sec-Butylbenzene	--	<0.0057	--	--	--	<0.0067	--	--	--	<0.0061	--	--	--	<0.0058	--	--	--	<0.0055	--	--	--	<0.0044	--	--	--	NE	NE	NE	NE
tert-Butylbenzene	--	<0.0057	--	--	--	<0.0067	--	--	--	<0.0061	--	--	--	<0.0058	--	--	--	<0.0055	--	--	--	<0.0044	--	--	--	NE	NE	100	NE
Carbon disulfide	--	<0.0057	--	--	--	<0.0067	--	--	--	<0.0061	--	--	--	<0.0058	--	--	--	<0.0055	--	--	--	<0.0044	--	--	--	NE	NE	100	NE
Carbon tetrachloride	--	<0.0023	--	--	--	<0.0027	--	--	--	<0.0025	--	--	--	<0.0023	--	--	--	<0.0022	--	--	--	<0.0018	--	--	--	5	30	5	10,000
Chlorobenzene	--	<0.0023	--	--	--	<0.0027	--	--	--	<0.0025	--	--	--	<0.0023	--	--	--	<0.0022	--	--	--	<0.0018	--	--	--	3	100	1	10,000
Chloroethane	--	<0.011	--	--	--	<0.013	--	--	--	<0.012	--	--	--	<0.012	--	--	--	<0.011	--	--	--	<0.0088	--	--	--	NE	NE	100	NE
Chloroform	--	<0.0023	--	--	--	<0.0027	--	--	--	<0.0025	--	--	--	<0.0023	--	--	--	<0.0022	--	--	--	<0.0018	--	--	--	0.2	500	0.2	10,000
Chloromethane	--	<0.0057	--	--	--	<0.0067	--	--	--	<0.0061	--	--	--	<0.0058	--	--	--	<0.0055	--	--	--	<0.0044	--	--	--	NE	NE	100	NE
o-Chlorotoluene	--	<0.0057	--	--	--	<0.0067	--	--	--	<0.0061	--	--	--	<0.0058	--	--	--	<0.0055	--	--	--	<0.0044	--	--	--	NE	NE	100	NE
p-Chlorotoluene	--	<0.0057	--	--	--	<0.0067	--	--	--	<0.0061	--	--	--	<0.0058	--	--	--	<0.0055	--	--	--	<0.0044	--	--	--	NE	NE	NE	NE
Di-Isopropyl ether	--	<0.0023	--	--	--	<0.0027	--	--	--	<0.0025	--	--	--	<0.0023	--	--	--	<0.0022	--	--	--	<0.0018	--	--	--	NE	NE	100	NE
1,2-Dibromo-3-chloropropane	--	<0.0057	--	--	--	<0.0067	--	--	--	<0.0061	--	--	--	<0.0058	--	--	--	<0.0055	--	--	--	<0.0044	--	--	--	NE	NE	10	NE
Dibromochloromethane	--	<0.0057	--	--	--	<0.0067	--	--	--	<0.0025	--	--	--	<0.0023	--	--	--	<0.0055	--	--	--	<0.0018	--	--	--	0.03	20	0.005	5,000
1,2-Dibromoethane	--	<0.0023	--	--	--	<0.0027	--	--	--	<0.0025	--	--	--	<0.0023	--	--	--	<0.0022	--	--	--	<0.0018	--	--	--	0.1	1	0.1	400
1,2-Dichlorobenzene	--	<0.0023	--	--	--	<0.0027	--	--	--	<0.0025	--	--	--	<0.0023	--	--	--	<0.0022	--	--	--	<0.0018	--	--	--	100	300	9	10,000
1,3-Dichlorobenzene	--	<0.0023	--	--	--	<0.0027	--	--	--	<0.0025	--	--	--	<0.0023	--	--	--	<0.0022	--	--	--	<0.0018	--	--	--	100	100	3	5,000
1,4-Dichlorobenzene	--	<0.0023	--	--	--	<0.0027	--	--	--	<0.0025	--	--	--	<0.0023	--	--	--	<0.0022	--	--	--	<0.0018	--	--	--	1	80	0.7	10,000
Dichlorodifluoromethane	--	<0.0057	--	--	--	<0.0067	--	--	--	<0.0061	--	--	--	<0.0058	--	--	--	<0.0055	--	--	--	<0.0044	--	--	--	NE	NE	1000	NE
1,1-Dichloroethane	--	<0.0023	--	--	--	<0.0027	--	--	--	<0.0025	--	--	--	<0.0023	--	--	--	<0.0022	--	--	--	<0.0018	--	--	--	9	500	0.4	10,000
1,2-Dichloroethane	--	<0.0023	--	--	--	<0.0027	--	--	--	<0.0025	--	--	--	<0.0023	--	--	--	<0.0022	--	--	--	<0.0018	--	--	--	0.1	20	0.1	9,000
1,1-Dichloroethene	--	<0.0023	--	--	--	<0.0027	--	--	--	<0.0025	--	--	--	<0.0023	--	--	--	<0.0022	--	--	--	<0.0018	--	--	--	40	500	3	10,000
cis-1,2-Dichloroethene	--	<0.0023	--	--	--	<0.0027	--	--	--	<0.0025	--	--	--	<0.0023	--	--	--	<0.0022	--	--	--	<0.0018	--	--	--	0.1	100	0.1	5,000
trans-1,2-Dichloroethene	--	<0.0023	--	--	--	<0.0027	--	--	--	<0.0025	--	--	--	<0.0023	--	--	--	<0.0022	--	--	--	<0.0018	--	--	--	1	500	1	10,000
1,2-Dichloropropane	--	<0.0023	--	--	--	<0.0027	--	--	--	<0.0025	--	--	--	<0.0023	--	--	--	<0.0022	--	--	--	<0.0018	--	--	--	0.1	30	0.1	10,000
1,3-Dichloropropane	--	<0.0057	--	--	--	<0.0067	--	--	--	<0.0061	--	--	--	<0.0058	--	--	--	<0.0055	--	--	--	<0.0044	--	--	--	NE	NE	500	NE
2,2-Dichloropropane	--	<0.0057	--	--	--	<0.0067	--	--	--	<0.0061	--	--	--	<0.0058	--	--	--	<0.0055	--	--	--	<0.0044	--	--	--	NE	NE	NE	NE
1,1-Dichloropropene	--	<0.0057	--	--	--	<0.0067	--	--	--	<0.0061	--	--	--	<0.0058	--	--	--	<0.0055	--	--	--	<0.0044	--	--	--	NE	NE	NE	NE
cis-1,3-Dichloropropene	--	<0.0023	--	--	--	<0.0027	--	--	--	<0.0025	--	--	--	<0.0023	--	--	--	<0.0022	--	--	--	<0.0018	--	--	--	NE	NE	0.01	NE
trans-1,3-Dichloropropene	--	<0.0023	--	--	--	<0.0027	--	--	--	<0.0025	--	--	--	<0.0023	--	--	--	<0.0022	--	--	--	<0.0018	--	--	--	NE	NE	0.01	NE
1,4-Dioxane	--	<0.14	--	--	--	<0.17	--	--	--	<0.15	--	--	--	<0.14	--	--	--	<0.14	--	--	--	<0.011	--	--	--	6	20	0.2	5,000
Ethyl Ether	--	<0.0057	--	--	--	<0.0067	--	--	--	<0.0061	--	--	--	<0.0058	--	--	--	<0.0055	--	--	--	<0.0044	--	--	--	NE	NE	100	NE
Ethylbenzene	--	<0.0023	--	--	--	<0.0027	--	--	--	**0.024**	--	--	--	<0.0023	--	--	--	<0.0022	--	--	--	<0.0018	--	--	--	500	500	40	10,000
Hexachlorobutadiene	--	<0.0057	--	--	--	<0.0067	--	--	--	<0.0061	--	--	--	<0.0058	--	--	--	<0.0055	--	--	--	<0.0044	--	--	--	30	30	30	1,000
2-Hexanone	--	<0.0057	--	--	--	<0.0067	--	--	--	<0.0061	--	--	--	<0.0058	--	--	--	<0.0055	--	--	--	<0.0044	--	--	--	NE	NE	100	NE
Isopropylbenzene	--	<0.0057	--	--	--	<0.0067	--	--	--	<0.0061	--	--	--	<0.0058	--	--	--	<0.0055	--	--	--	<0.0044	--	--	--	NE	NE	1000	NE
p-Isopropyltoluene	--	<0.0057	--	--	--	<0.0067	--	--	--	<0.0061	--	--	--	<0.0058	--	--	--	<0.0055	--	--	--	<0.0044	--	--	--	NE	NE	100	NE
Methyl Tert Butyl Ether	--	<0.0023	--	--	--	<0.0027	--	--	--	<0.0025	--	--	--	<0.0023	--	--	--	<0.0022	--	--	--	<0.0018	--	--	--	100	100	0.1	5,000
4-Methyl-2-pentanone (MIBK)	--	<0.0057	--	--	--	<0.0067	--	--	--	<0.0061	--	--	--	<0.0058	--	--	--	<0.0055	--	--	--	<0.0044	--	--	--	50	400	0.4	10,000
Methylene bromide	--	<0.0057	--	--	--	<0.0067	--	--	--	<0.0061	--	--	--	<0.0058	--	--	--	<0.0055	--	--	--	<0.0044	--	--	--	NE	NE	500	NE
Methylene chloride	--	<0.0023	--	--	--	<0.0027	--	--	--	<0.0025	--	--	--	<0.0023	--	--	--	<0.0022	--	--	--	<0.0018	--	--	--	4	400	0.1	7,000
Naphthalene	--	<0.0057	--	--	--	<0.0067	--	--	--	<0.0061	--	--	--	**0.0117**	--	--	--	**0.0093**	--	--	--	**0.0085**	--	--	--	20	500	4	10,000
n-Propylbenzene	--	<0.0057	--	--	--	<0.0067	--	--	--	<0.0061	--	--	--	<0.0058	--	--	--	<0.0055	--	--	--	<0.0044	--	--	--	NE	NE	100	NE
Styrene	--	<0.0057	--	--	--	<0.0067	--	--	--	<0.0061	--	--	--	<0.0058	--	--	--	<0.0055	--	--	--	<0.0044	--	--	--	4	70	3	10,000
tert-Amyl Methyl Ether	--	<0.0057	--	--	--	<0.0067	--	--	--	<0.0061	--	--	--	<0.0058	--	--	--	<0.0055	--	--	--	<0.0044	--	--	--	NE	NE	NE	NE
tert-Butyl Ethyl Ether	--	<0.0023	--	--	--	<0.0027	--	--	--	<0.0025	--	--	--	<0.0023	--	--	--	<0.0022	--	--	--	<0.0018	--	--	--	NE	NE	NE	NE
1,1,1,2-Tetrachloroethane	--	<0.0023	--	--	--	<0.0027	--	--	--	<0.0025	--	--	--	<0.0023	--	--	--	<0.0022	--	--	--	<0.0018	--	--	--	0.1	80	0.1	5,000
1,1,2,2-Tetrachloroethane	--	<0.0057	--	--	--	<0.0067	--	--	--	<0.0061	--	--	--	<0.0058	--	--	--	<0.0055	--	--	--	<0.0044	--	--	--	0.02	10	0.005	4,000
Tetrachloroethene	--	<0.0023	--	--	--	<0.0027	--	--	--	<0.0025	--	--	--	<0.0023	--	--	--	<0.0022	--	--	--	<0.0018	--	--	--	10	30	1	10,000
Tetrahydrofuran	--	<0.011	--	--	--	<0.013	--	--	--	<0.012	--	--	--	<0.012	--	--	--	<0.011	--	--	--	<0.0088	--	--	--	NE	NE	500	NE
Toluene	--	<0.0057	--	--	--	<0.0067	--	--	--	<0.0061	--	--	--	<0.0058	--	--	--	<0.0055	--	--	--	<0.0044	--	--	--	500	500	30	10,000
1,2,3-Trichlorobenzene	--	<0.0057	--	--	--	<0.0067	--	--	--	<0.0061	--	--	--	<0.0058	--	--	--	<0.0055	--	--	--	<0.0044	--	--	--	NE	NE	NE	NE
1,2,4-Trichlorobenzene	--	<0.0057	--	--	--	<0.0067	--	--	--	<0.0061	--	--	--	<0.0058	--	--	--	<0.0055	--	--	--	<0.0044	--	--	--	6	700	2	10,000
1,1,1-Trichloroethane	--	<0.0023	--	--	--	<0.0027	--	--	--	<0.0025	--	--	--	<0.0023	--	--	--	<0.0022	--	--	--	<0.0018	--	--	--	500	500	30	10,000
1,1,2-Trichloroethane	--	<0.0023	--	--	--	<0.0027	--	--	--	<0.0025	--	--	--	<0.0023	--	--	--	<0.0022	--	--	--	<0.0018	--	--	--	2	40	0.1	5,000
Trichloroethene	--	<0.0023	--	--	--	<0.0027	--	--	--	<0.0025	--	--	--	<0.0023	--	--	--	<0.0022	--	--	--	<0.0018	--	--	--	0.3	30	0.3	600
Trichlorofluoromethane	--	<0.0023	--	--	--	<0.0027	--	--	--	<0.0025	--	--	--	<0.0023	--	--	--	<0.0022	--	--	--	<0.0018	--	--	--	NE	NE	1000	NE
1,2,3-Trichloropropane	--	<0.0057	--	--	--	<0.0067	--	--	--	<0.0061	--	--	--	<0.0058	--	--	--	<0.0055	--	--	--	<0.0044	--	--	--	NE	NE	100	NE
1,2,4-Trimethylbenzene	--	<0.0057	--	--	--	<0.0067	--	--	--	<0.0061	--	--	--	<0.0058	--	--	--	<0.0055	--	--	--	<0.0044	--	--	--	NE	NE	1000	NE
1,3,5-Trimethylbenzene	--	<0.0057	--	--	--	<0.0067	--	--	--	<0.0061	--	--	--	<0.0058	--	--	--	<0.0055	--	--	--	<0.0044	--	--	--	NE	NE	10	NE
Vinyl chloride	--	<0.011	--	--	--	<0.013	--	--	--	<0.012	--	--	--	<0.012	--	--	--	<0.011	--	--	--	<0.0088	--	--	--	0.7	1	0.7	600
m,p-Xylene	--	**0.0063**	--	--	--	**0.0045**	--	--	--	**0.121**	--	--	--	<0.0023	--	--	--	<0.0022	--	--	--	<0.0018	--	--	--	100	500	100	10,000
o-Xylene	--	**0.0026**	--	--	--	<0.0027	--	--	--	**0.0344**	--	--	--	<0.0023	--	--	--	<0.0022	--	--	--	<0.0018	--	--	--	100	500	100	10,000
Xylene (total)	--	**0.0089**	--	--	--	**0.0063**	--	--	--	**0.155**	--	--	--	<0.0023	--	--	--	<0.0022	--	--	--	<0.0018	--	--	--	100	500	100	10,000

NOTES:

-- is analysis not performed	mg/kg is milligrams per kilogram	VOC is volatile organic compound
NE is not established	mg/L is milligrams per liter	<2.0 indicates not detected at or above the laboratory reporting limit of 2.0 mg/kg
ND is not detected	PID is photoionization detector	Analytes detected above the method reporting limit are in **Bold**
	ppmv is parts per million by volume	Analytes detected above MCP Reportable Concentrations are in Red

TABLE 4
SUMMARY OF SOIL ANALYTICAL DATA - EPH, VPH

Maggiore Somerville
343-351 Summer Street
Somerville, Massachusetts

Sample Date	August 8, 2016								August 12, 2016			MCP Method 1 Soil Standards (mg/kg)		MCP Reportable Concentrations (mg/kg)	MCP Method 3 Upper Concentration Limits (mg/kg)
Sample ID	B-101	B-102	B-103	B-104	MW-105	MW-106	MW-107	MW-108	S-1	S-2	S-3	S-1		RCS-1	
Depth (feet)	0-10	0-10	13	0-10	13.5	9	13	13.5	8-9	8	8.5				
PID (ppmv)	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	GW-2	GW-3		
EXTRACTABLE PETROLEUM HYDROCARBONS (mg/kg)															
C9-C18 Aliphatics	<9.3	<11	<12	<9.2	<11	<9.7	<11	<11	<8.8	<9.5	**11.7**	1,000	1,000	1,000	20,000
C19-C36 Aliphatics	<19	<23	<23	**21.4**	<21	<19	<22	<22	**76.6**	<19	**95.3**	3,000	3,000	3,000	20,000
C11-C22 Aromatics	**26.7**	<23	<23	**63.3**	<21	<19	<22	<22	**142**	<19	**655**	1,000	1,000	1,000	10,000
Acenaphthene	<0.46	<0.57	<0.58	**0.5**	<0.54	<0.49	<0.55	<0.54	**0.6**	<0.47	**1.7**	1,000	1,000	4	10,000
Acenaphthylene	<0.46	<0.57	<0.58	<0.46	<0.54	<0.49	<0.55	<0.54	<0.44	<0.47	**2.5**	600	10	1	10,000
Anthracene	<0.46	<0.57	<0.58	**1.1**	<0.54	<0.49	<0.55	<0.54	**1.7**	<0.47	**11.9**	1,000	1,000	1,000	10,000
Benzo(a)anthracene	**0.8**	**1.2**	<0.58	**3.1**	<0.54	<0.49	<0.55	<0.54	**5.2**	<0.47	**28.1**	7	7	7	3,000
Benzo(a)pyrene	**1.3**	**1.0**	<0.58	**2.7**	<0.54	<0.49	<0.55	<0.54	**4.8**	<0.47	**19.2**	2	2	2	300
Benzo(b)fluoranthene	**2.2**	**1.93**	<0.58	**4.7**	<0.54	<0.49	<0.55	<0.54	**4.5**	<0.47	**28.2**	7	7	7	3,000
Benzo(g,h,i)perylene	**1.0**	**0.6**	<0.58	**1.5**	<0.54	<0.49	<0.55	<0.54	**2.9**	<0.47	**9.6**	1,000	1,000	1,000	10,000
Benzo(k)fluoranthene	<0.46	**1.6**	<0.58	<0.46	<0.54	<0.49	<0.55	<0.54	**3.9**	<0.47	**10.8**	70	70	70	10,000
Chrysene	**0.7**	**1.1**	<0.58	**2.7**	<0.54	<0.49	<0.55	<0.54	**5.0**	<0.47	**23.6**	70	70	70	10,000
Dibenz(a,h)anthracene	<0.46	<0.57	<0.58	<0.46	<0.54	<0.49	<0.55	<0.54	**1.0**	<0.47	**3.8**	0.7	0.7	0.7	300
Fluoranthene	**1.1**	**1.7**	<0.58	**6.6**	<0.54	<0.49	<0.55	<0.54	**10.5**	<0.47	**55.7**	1,000	1,000	1,000	10,000
Fluorene	<0.46	<0.57	<0.58	<0.46	<0.54	<0.49	<0.55	<0.54	**0.7**	<0.47	**4.7**	1,000	1,000	1,000	10,000
Indeno(1,2,3-cd)pyrene	<0.46	<0.57	<0.58	<0.46	<0.54	<0.49	<0.55	<0.54	**2.9**	<0.47	**11.4**	7	7	7	3,000
2-Methylnaphthalene	<0.46	<0.57	<0.58	<0.46	<0.54	<0.49	<0.55	<0.54	<0.44	<0.47	<0.47	80	300	0.7	5,000
Naphthalene	<0.46	<0.57	<0.58	<0.46	<0.54	<0.49	<0.55	<0.54	<0.44	<0.47	<0.47	40	500	4	10,000
Phenanthrene	<0.46	**0.6**	<0.58	**4.2**	<0.54	<0.49	<0.55	<0.54	**6.7**	<0.47	**44.5**	500	500	10	10,000
Pyrene	**1.1**	**1.5**	<0.58	**5.1**	<0.54	<0.49	<0.55	<0.54	**7.9**	<0.47	**39.2**	1,000	1,000	1,000	10,000
VOLATILE PETROLEUM HYDROCARBONS (mg/kg)															
C5- C8 Aliphatics	<6.3	<8.6	--	<5.0	--	--	--	--	<5.7	<5.4	<5.0	100	100	100	5,000
C9- C12 Aliphatics	<6.3	<8.6	--	<5.0	--	--	--	--	<5.7	<5.4	<5.0	1,000	1,000	1,000	20,000
C9- C10 Aromatics	<6.3	<8.6	--	<5.0	--	--	--	--	<5.7	<5.4	<5.0	100	100	100	5,000
Benzene	<0.31	<0.43	--	<0.25	--	--	--	--	<0.28	<0.27	<0.25	40	40	2	10,000
Ethylbenzene	<0.31	<0.43	--	<0.25	--	--	--	--	<0.28	<0.27	<0.25	500	500	40	10,000
Methyl Tert Butyl Ether	<0.063	<0.086	--	<0.050	--	--	--	--	<0.057	<0.054	<0.050	100	100	0.1	5,000
Naphthalene	<0.31	<0.43	--	<0.25	--	--	--	--	<0.28	<0.27	<0.25	20	500	4	10,000
Toluene	<0.31	<0.43	--	<0.25	--	--	--	--	<0.28	<0.27	<0.25	500	500	30	10,000
m,p-Xylene	<0.31	<0.43	--	<0.25	--	--	--	--	--	--	--	100	500	100	10,000
o-Xylene	<0.31	<0.43	--	<0.25	--	--	--	--	--	--	--	100	500	100	10,000
Total Xylenes	<0.62	<0.86	--	<0.50	--	--	--	--	<0.56	<0.54	<0.50	100	500	100	10,000

NOTES:

-- is analysis not performed.
NE is not established.
ND is not detected.
ppmv is parts per million by volume.

mg/kg is milligrams per kilogram.
mg/L is milligrams per liter.
PID is photoionization detector.
EPH is extractable petroleum hydrocarbons

VPH is volatile petroleum hydrocarbons
<2.0 indicates not detected at or above the laboratory reporting limit of 2.0 mg/kg.
Analytes detected above the method reporting limit are in **Bold**.
Analytes detected above MCP Reportable Concentrations are in **Red**.

TABLE 4
SUMMARY OF SOIL ANALYTICAL DATA - EPH, VPH

Maggiore Somerville
343-351 Summer Street
Somerville, Massachusetts

Sample Date	August 12, 2016						March 28, 2017					MCP Method 1 Soil Standards (mg/kg)		MCP Reportable Concentrations (mg/kg)	MCP Method 3 Upper Concentration Limits (mg/kg)
Sample ID	S-4	S-5	S-6	S-7	S-8	Stockpile	PC-1 0-15' COMP	PC-1 0-5'	PC-1 10-15'	PC-1 5-10'	PC-2 0-15' COMP	S-1		RCS-1	
Depth (feet)	7-8	7	5	6	6	NA	0-15	0-5	10-15	5-10	0-15	GW-2	GW-3		
PID (ppmv)	BDL	BDL	BDL	BDL	BDL	225.1	BDL	BDL	BDL	BDL	BDL				
EXTRACTABLE PETROLEUM HYDROCARBONS (mg/kg)															
C9-C18 Aliphatics	<8.9	<9.1	**13.4**	**10.3**	<9.4	**1,390**	--	--	--	--	--	1,000	1,000	1,000	20,000
C19-C36 Aliphatics	<18	**64.9**	**488**	**380**	**226**	**5,850**	--	--	--	--	--	3,000	3,000	3,000	20,000
C11-C22 Aromatics	<18	**161**	**294**	**171**	**128**	**2,350**	--	--	--	--	--	1,000	1,000	1,000	10,000
Acenaphthene	<0.44	**0.7**	<0.46	<0.46	<0.47	**2.6**	--	--	--	--	--	1,000	1,000	4	10,000
Acenaphthylene	<0.44	<0.45	<0.46	<0.46	<0.47	<0.50	--	--	--	--	--	600	10	1	10,000
Anthracene	<0.44	**1.9**	<0.46	<0.46	<0.47	**0.9**	--	--	--	--	--	1,000	1,000	1,000	10,000
Benzo(a)anthracene	<0.44	**6.2**	<0.46	<0.46	**0.7**	**3.3**	--	--	--	--	--	7	7	7	3,000
Benzo(a)pyrene	<0.44	**5.5**	<0.46	<0.46	**0.9**	<0.50	--	--	--	--	--	2	2	2	300
Benzo(b)fluoranthene	<0.44	**5.9**	<0.46	<0.46	**0.6**	<0.50	--	--	--	--	--	7	7	7	3,000
Benzo(g,h,i)perylene	<0.44	**3.4**	<0.46	<0.46	**0.8**	<0.50	--	--	--	--	--	1,000	1,000	1,000	10,000
Benzo(k)fluoranthene	<0.44	**2.9**	<0.46	<0.46	**0.6**	<0.50	--	--	--	--	--	70	70	70	10,000
Chrysene	<0.44	**5.5**	<0.46	<0.46	**0.7**	**3.3**	--	--	--	--	--	70	70	70	10,000
Dibenz(a,h)anthracene	<0.44	**1.2**	<0.46	<0.46	<0.47	<0.50	--	--	--	--	--	0.7	0.7	0.7	300
Fluoranthene	<0.44	**12.5**	<0.46	<0.46	**1.4**	**5.3**	--	--	--	--	--	1,000	1,000	1,000	10,000
Fluorene	<0.44	**0.8**	<0.46	<0.46	<0.47	**2.8**	--	--	--	--	--	1,000	1,000	1,000	10,000
Indeno(1,2,3-cd)pyrene	<0.44	**3.4**	<0.46	<0.46	<0.47	<0.50	--	--	--	--	--	7	7	7	3,000
2-Methylnaphthalene	<0.44	<0.45	<0.46	<0.46	<0.47	**41.4**	--	--	--	--	--	80	300	0.7	5,000
Naphthalene	<0.44	<0.45	<0.46	<0.46	<0.47	**24.1**	--	--	--	--	--	40	500	4	10,000
Phenanthrene	<0.44	**9.1**	<0.46	<0.46	**0.8**	**4.6**	--	--	--	--	--	500	500	10	10,000
Pyrene	<0.44	**9.5**	<0.46	<0.46	**1.1**	**4.6**	--	--	--	--	--	1,000	1,000	1,000	10,000
VOLATILE PETROLEUM HYDROCARBONS (mg/kg)															
C5- C8 Aliphatics	<5.1	<5.7	<5.8	<9.1	<5.2	**118**	--	--	--	--	--	100	100	100	5,000
C9- C12 Aliphatics	<5.1	<5.7	<5.8	<9.1	<5.2	**398**	--	--	--	--	--	1,000	1,000	1,000	20,000
C9- C10 Aromatics	<5.1	<5.7	<5.8	<9.1	<5.2	**566**	--	--	--	--	--	100	100	100	5,000
Benzene	<0.26	<0.29	<0.29	<0.46	<0.26	0.4	--	--	--	--	--	40	40	2	10,000
Ethylbenzene	<0.26	<0.29	<0.29	<0.46	<0.26	13.6	--	--	--	--	--	500	500	40	10,000
Methyl Tert Butyl Ether	<0.051	<0.057	<0.058	<0.091	<0.052	<0.063	--	--	--	--	--	100	100	0.1	5,000
Naphthalene	<0.26	<0.29	<0.29	<0.46	<0.26	**23.3**	--	--	--	--	--	20	500	4	10,000
Toluene	<0.26	<0.29	<0.29	<0.46	<0.26	**11.0**	--	--	--	--	--	500	500	30	10,000
m,p-Xylene	--	--	--	--	--	--	--	--	--	--	--	100	500	100	10,000
o-Xylene	--	--	--	--	--	--	--	--	--	--	--	100	500	100	10,000
Total Xylenes	<0.52	<0.58	<0.58	<0.92	<0.52	**63.1**	--	--	--	--	--	100	500	100	10,000

NOTES:

– is analysis not performed.
NE is not established.
ND is not detected.
ppmv is parts per million by volume.

mg/kg is milligrams per kilogram.
mg/L is milligrams per liter.
PID is photoionization detector.
EPH is extractable petroleum hydrocarbons

VPH is volatile petroleum hydrocarbons
<2.0 indicates not detected at or above the laboratory reporting limit of 2.0 mg/kg.
Analytes detected above the method reporting limit are in **Bold**.
Analytes detected above MCP Reportable Concentrations are in **Red**.

TABLE 4
SUMMARY OF SOIL ANALYTICAL DATA - EPH, VPH

Maggiore Somerville
343-351 Summer Street
Somerville, Massachusetts

Sample Date	March 28, 2017											MCP Method 1 Soil Standards (mg/kg)		MCP Reportable Concentrations (mg/kg)	MCP Method 3 Upper Concentration Limits (mg/kg)
Sample ID	PC-2 0-5'	PC-2 10-15'	PC-2 5-10'	PC-3 0-15' COMP	PC-3 0-5'	PC-3 10-15'	PC-3 5-10'	PC-4 0-15' COMP	PC-4 0-5'	PC-4 10-15'	PC-4 5-10'	S-1		RCS-1	
Depth (feet)	0-5	10-15	5-10	0-15	0-5	10-15	5-10	0-15	0-5	10-15	5-10				
PID (ppmv)	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	GW-2	GW-3		
EXTRACTABLE PETROLEUM HYDROCARBONS (mg/kg)															
C9-C18 Aliphatics	--	--	--	--	--	--	--	--	--	--	--	1,000	1,000	1,000	20,000
C19-C36 Aliphatics	--	--	--	--	--	--	--	--	--	--	--	3,000	3,000	3,000	20,000
C11-C22 Aromatics	--	--	--	--	--	--	--	--	--	--	--	1,000	1,000	1,000	10,000
Acenaphthene	--	--	--	--	--	--	--	--	--	--	--	1,000	1,000	4	10,000
Acenaphthylene	--	--	--	--	--	--	--	--	--	--	--	600	10	1	10,000
Anthracene	--	--	--	--	--	--	--	--	--	--	--	1,000	1,000	1,000	10,000
Benzo(a)anthracene	--	--	--	--	--	--	--	--	--	--	--	7	7	7	3,000
Benzo(a)pyrene	--	--	--	--	--	--	--	--	--	--	--	2	2	2	300
Benzo(b)fluoranthene	--	--	--	--	--	--	--	--	--	--	--	7	7	7	3,000
Benzo(g,h,i)perylene	--	--	--	--	--	--	--	--	--	--	--	1,000	1,000	1,000	10,000
Benzo(k)fluoranthene	--	--	--	--	--	--	--	--	--	--	--	70	70	70	10,000
Chrysene	--	--	--	--	--	--	--	--	--	--	--	70	70	70	10,000
Dibenz(a,h)anthracene	--	--	--	--	--	--	--	--	--	--	--	0.7	0.7	0.7	300
Fluoranthene	--	--	--	--	--	--	--	--	--	--	--	1,000	1,000	1,000	10,000
Fluorene	--	--	--	--	--	--	--	--	--	--	--	1,000	1,000	1,000	10,000
Indeno(1,2,3-cd)pyrene	--	--	--	--	--	--	--	--	--	--	--	7	7	7	3,000
2-Methylnaphthalene	--	--	--	--	--	--	--	--	--	--	--	80	300	0.7	5,000
Naphthalene	--	--	--	--	--	--	--	--	--	--	--	40	500	4	10,000
Phenanthrene	--	--	--	--	--	--	--	--	--	--	--	500	500	10	10,000
Pyrene	--	--	--	--	--	--	--	--	--	--	--	1,000	1,000	1,000	10,000
VOLATILE PETROLEUM HYDROCARBONS (mg/kg)															
C5- C8 Aliphatics	--	--	--	--	--	--	--	--	--	--	--	100	100	100	5,000
C9- C12 Aliphatics	--	--	--	--	--	--	--	--	--	--	--	1,000	1,000	1,000	20,000
C9- C10 Aromatics	--	--	--	--	--	--	--	--	--	--	--	100	100	100	5,000
Benzene	--	--	--	--	--	--	--	--	--	--	--	40	40	2	10,000
Ethylbenzene	--	--	--	--	--	--	--	--	--	--	--	500	500	40	10,000
Methyl Tert Butyl Ether	--	--	--	--	--	--	--	--	--	--	--	100	100	0.1	5,000
Naphthalene	--	--	--	--	--	--	--	--	--	--	--	20	500	4	10,000
Toluene	--	--	--	--	--	--	--	--	--	--	--	500	500	30	10,000
m,p-Xylene	--	--	--	--	--	--	--	--	--	--	--	100	500	100	10,000
o-Xylene	--	--	--	--	--	--	--	--	--	--	--	100	500	100	10,000
Total Xylenes	--	--	--	--	--	--	--	--	--	--	--	100	500	100	10,000

NOTES:

-- is analysis not performed.
NE is not established.
ND is not detected.
ppmv is parts per million by volume.

mg/kg is milligrams per kilogram.
mg/L is milligrams per liter.
PID is photoionization detector.
EPH is extractable petroleum hydrocarbons

VPH is volatile petroleum hydrocarbons
<2.0 indicates not detected at or above the laboratory reporting limit of 2.0 mg/kg.
Analytes detected above the method reporting limit are in **Bold**.
Analytes detected above MCP Reportable Concentrations are in Red.

TABLE 4
SUMMARY OF SOIL ANALYTICAL DATA - EPH, VPH

Maggiore Somerville
343-351 Summer Street
Somerville, Massachusetts

Sample Date	March 28, 2017										MCP Method 1 Soil Standards (mg/kg)		MCP Reportable Concentrations (mg/kg)	MCP Method 3 Upper Concentration Limits (mg/kg)
Sample ID	PC-5 0-15' COMP	PC-5 0-5'	PC-5 10-15'	PC-5 5-10'	PC-6 0-15' COMP	PC-6 0-5'	PC-6 10-15'	PC-6 5-10'	PC-7 0-15'	PC-7 0-5'	S-1		RCS-1	
Depth (feet)	0-15	0-5	10-15	5-10	0-15	0-5	10-15	5-10	0-15	0-5				
PID (ppmv)	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	GW-2	GW-3		
EXTRACTABLE PETROLEUM HYDROCARBONS (mg/kg)														
C9-C18 Aliphatics	--	--	--	--	--	--	--	--	--	--	1,000	1,000	1,000	20,000
C19-C36 Aliphatics	--	--	--	--	--	--	--	--	--	--	3,000	3,000	3,000	20,000
C11-C22 Aromatics	--	--	--	--	--	--	--	--	--	--	1,000	1,000	1,000	10,000
Acenaphthene	--	--	--	--	--	--	--	--	--	--	1,000	1,000	4	10,000
Acenaphthylene	--	--	--	--	--	--	--	--	--	--	600	10	1	10,000
Anthracene	--	--	--	--	--	--	--	--	--	--	1,000	1,000	1,000	10,000
Benzo(a)anthracene	--	--	--	--	--	--	--	--	--	--	7	7	7	3,000
Benzo(a)pyrene	--	--	--	--	--	--	--	--	--	--	2	2	2	300
Benzo(b)fluoranthene	--	--	--	--	--	--	--	--	--	--	7	7	7	3,000
Benzo(g,h,i)perylene	--	--	--	--	--	--	--	--	--	--	1,000	1,000	1,000	10,000
Benzo(k)fluoranthene	--	--	--	--	--	--	--	--	--	--	70	70	70	10,000
Chrysene	--	--	--	--	--	--	--	--	--	--	70	70	70	10,000
Dibenz(a,h)anthracene	--	--	--	--	--	--	--	--	--	--	0.7	0.7	0.7	300
Fluoranthene	--	--	--	--	--	--	--	--	--	--	1,000	1,000	1,000	10,000
Fluorene	--	--	--	--	--	--	--	--	--	--	1,000	1,000	1,000	10,000
Indeno(1,2,3-cd)pyrene	--	--	--	--	--	--	--	--	--	--	7	7	7	3,000
2-Methylnaphthalene	--	--	--	--	--	--	--	--	--	--	80	300	0.7	5,000
Naphthalene	--	--	--	--	--	--	--	--	--	--	40	500	4	10,000
Phenanthrene	--	--	--	--	--	--	--	--	--	--	500	500	10	10,000
Pyrene	--	--	--	--	--	--	--	--	--	--	1,000	1,000	1,000	10,000
VOLATILE PETROLEUM HYDROCARBONS (mg/kg)														
C5- C8 Aliphatics	--	--	--	--	--	--	--	--	--	--	100	100	100	5,000
C9- C12 Aliphatics	--	--	--	--	--	--	--	--	--	--	1,000	1,000	1,000	20,000
C9- C10 Aromatics	--	--	--	--	--	--	--	--	--	--	100	100	100	5,000
Benzene	--	--	--	--	--	--	--	--	--	--	40	40	2	10,000
Ethylbenzene	--	--	--	--	--	--	--	--	--	--	500	500	40	10,000
Methyl Tert Butyl Ether	--	--	--	--	--	--	--	--	--	--	100	100	0.1	5,000
Naphthalene	--	--	--	--	--	--	--	--	--	--	20	500	4	10,000
Toluene	--	--	--	--	--	--	--	--	--	--	500	500	30	10,000
m,p-Xylene	--	--	--	--	--	--	--	--	--	--	100	500	100	10,000
o-Xylene	--	--	--	--	--	--	--	--	--	--	100	500	100	10,000
Total Xylenes	--	--	--	--	--	--	--	--	--	--	100	500	100	10,000

NOTES:

-- is analysis not performed.
NE is not established.
ND is not detected.
ppmv is parts per million by volume.

mg/kg is milligrams per kilogram.
mg/L is milligrams per liter.
PID is photoionization detector.
EPH is extractable petroleum hydrocarbons

VPH is volatile petroleum hydrocarbons
<2.0 indicates not detected at or above the laboratory reporting limit of 2.0 mg/kg.
Analytes detected above the method reporting limit are in **Bold**.
Analytes detected above MCP Reportable Concentrations are in Red.

TABLE 4

SUMMARY OF SOIL ANALYTICAL DATA - EPH, VPH

Maggiore Somerville
343-351 Summer Street
Somerville, Massachusetts

Sample Date	March 28, 2017										MCP Method 1 Soil Standards (mg/kg)		MCP Reportable Concentrations (mg/kg)	MCP Method 3 Upper Concentration Limits (mg/kg)
Sample ID	PC-7 10-15'	PC-7 5-10'	PC-8 0-15' COMP	PC-8 0-5'	PC-8 10-15'	PC-8 5-10'	PC-9 0-15' COMP	PC-9 0-5'	PC-9 10-15'	PC-9 5-10'	S-1		RCS-1	
Depth (feet)	10-15	5-10	0-15	0-5	10-15	5-10	0-15	0-5	10-15	5-10	GW-2	GW-3		
PID (ppmv)	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL				
EXTRACTABLE PETROLEUM HYDROCARBONS (mg/kg)														
C9-C18 Aliphatics	--	--	--	--	--	--	--	--	--	--	1,000	1,000	1,000	20,000
C19-C36 Aliphatics	--	--	--	--	--	--	--	--	--	--	3,000	3,000	3,000	20,000
C11-C22 Aromatics	--	--	--	--	--	--	--	--	--	--	1,000	1,000	1,000	10,000
Acenaphthene	--	--	--	--	--	--	--	--	--	--	1,000	1,000	4	10,000
Acenaphthylene	--	--	--	--	--	--	--	--	--	--	600	10	1	10,000
Anthracene	--	--	--	--	--	--	--	--	--	--	1,000	1,000	1,000	10,000
Benzo(a)anthracene	--	--	--	--	--	--	--	--	--	--	7	7	7	3,000
Benzo(a)pyrene	--	--	--	--	--	--	--	--	--	--	2	2	2	300
Benzo(b)fluoranthene	--	--	--	--	--	--	--	--	--	--	7	7	7	3,000
Benzo(g,h,i)perylene	--	--	--	--	--	--	--	--	--	--	1,000	1,000	1,000	10,000
Benzo(k)fluoranthene	--	--	--	--	--	--	--	--	--	--	70	70	70	10,000
Chrysene	--	--	--	--	--	--	--	--	--	--	70	70	70	10,000
Dibenz(a,h)anthracene	--	--	--	--	--	--	--	--	--	--	0.7	0.7	0.7	300
Fluoranthene	--	--	--	--	--	--	--	--	--	--	1,000	1,000	1,000	10,000
Fluorene	--	--	--	--	--	--	--	--	--	--	1,000	1,000	1,000	10,000
Indeno(1,2,3-cd)pyrene	--	--	--	--	--	--	--	--	--	--	7	7	7	3,000
2-Methylnaphthalene	--	--	--	--	--	--	--	--	--	--	80	300	0.7	5,000
Naphthalene	--	--	--	--	--	--	--	--	--	--	40	500	4	10,000
Phenanthrene	--	--	--	--	--	--	--	--	--	--	500	500	10	10,000
Pyrene	--	--	--	--	--	--	--	--	--	--	1,000	1,000	1,000	10,000
VOLATILE PETROLEUM HYDROCARBONS (mg/kg)														
C5- C8 Aliphatics	--	--	--	--	--	--	--	--	--	--	100	100	100	5,000
C9- C12 Aliphatics	--	--	--	--	--	--	--	--	--	--	1,000	1,000	1,000	20,000
C9- C10 Aromatics	--	--	--	--	--	--	--	--	--	--	100	100	100	5,000
Benzene	--	--	--	--	--	--	--	--	--	--	40	40	2	10,000
Ethylbenzene	--	--	--	--	--	--	--	--	--	--	500	500	40	10,000
Methyl Tert Butyl Ether	--	--	--	--	--	--	--	--	--	--	100	100	0.1	5,000
Naphthalene	--	--	--	--	--	--	--	--	--	--	20	500	4	10,000
Toluene	--	--	--	--	--	--	--	--	--	--	500	500	30	10,000
m,p-Xylene	--	--	--	--	--	--	--	--	--	--	100	500	100	10,000
o-Xylene	--	--	--	--	--	--	--	--	--	--	100	500	100	10,000
Total Xylenes	--	--	--	--	--	--	--	--	--	--	100	500	100	10,000

NOTES:

-- is analysis not performed.
NE is not established.
ND is not detected.
ppmv is parts per million by volume.

mg/kg is milligrams per kilogram.
mg/L is milligrams per liter.
PID is photoionization detector.
EPH is extractable petroleum hydrocarbons

VPH is volatile petroleum hydrocarbons
<2.0 indicates not detected at or above the laboratory reporting limit of 2.0 mg/kg.
Analytes detected above the method reporting limit are in **Bold**.
Analytes detected above MCP Reportable Concentrations are in Red.

TABLE 4
SUMMARY OF SOIL ANALYTICAL DATA - EPH, VPH

Maggiore Somerville
343-351 Summer Street
Somerville, Massachusetts

Sample Date	March 28, 2017										MCP Method 1 Soil Standards (mg/kg)		MCP Reportable Concentrations (mg/kg)	MCP Method 3 Upper Concentration Limits (mg/kg)
Sample ID	PC-10 0-15'	PC-10 0-5'	PC-10 10-15'	PC-10 5-10'	PC-11 0-15' COMP	PC-11 0-5'	PC-11 10-15'	PC-11 5-10'	PC-12 0-15'	PC-12 0-5'	S-1		RCS-1	
Depth (feet)	0-15	0-5	10-15	5-10	0-15	0-5	10-15	5-10	0-15	0-5	GW-2	GW-3		
PID (ppmv)	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL				
EXTRACTABLE PETROLEUM HYDROCARBONS (mg/kg)														
C9-C18 Aliphatics	--	--	--	--	--	--	--	--	--	--	1,000	1,000	1,000	20,000
C19-C36 Aliphatics	--	--	--	--	--	--	--	--	--	--	3,000	3,000	3,000	20,000
C11-C22 Aromatics	--	--	--	--	--	--	--	--	--	--	1,000	1,000	1,000	10,000
Acenaphthene	--	--	--	--	--	--	--	--	--	--	1,000	1,000	4	10,000
Acenaphthylene	--	--	--	--	--	--	--	--	--	--	600	10	1	10,000
Anthracene	--	--	--	--	--	--	--	--	--	--	1,000	1,000	1,000	10,000
Benzo(a)anthracene	--	--	--	--	--	--	--	--	--	--	7	7	7	3,000
Benzo(a)pyrene	--	--	--	--	--	--	--	--	--	--	2	2	2	300
Benzo(b)fluoranthene	--	--	--	--	--	--	--	--	--	--	7	7	7	3,000
Benzo(g,h,i)perylene	--	--	--	--	--	--	--	--	--	--	1,000	1,000	1,000	10,000
Benzo(k)fluoranthene	--	--	--	--	--	--	--	--	--	--	70	70	70	10,000
Chrysene	--	--	--	--	--	--	--	--	--	--	70	70	70	10,000
Dibenz(a,h)anthracene	--	--	--	--	--	--	--	--	--	--	0.7	0.7	0.7	300
Fluoranthene	--	--	--	--	--	--	--	--	--	--	1,000	1,000	1,000	10,000
Fluorene	--	--	--	--	--	--	--	--	--	--	1,000	1,000	1,000	10,000
Indeno(1,2,3-cd)pyrene	--	--	--	--	--	--	--	--	--	--	7	7	7	3,000
2-Methylnaphthalene	--	--	--	--	--	--	--	--	--	--	80	300	0.7	5,000
Naphthalene	--	--	--	--	--	--	--	--	--	--	40	500	4	10,000
Phenanthrene	--	--	--	--	--	--	--	--	--	--	500	500	10	10,000
Pyrene	--	--	--	--	--	--	--	--	--	--	1,000	1,000	1,000	10,000
VOLATILE PETROLEUM HYDROCARBONS (mg/kg)														
C5- C8 Aliphatics	--	--	--	--	--	--	--	--	--	--	100	100	100	5,000
C9- C12 Aliphatics	--	--	--	--	--	--	--	--	--	--	1,000	1,000	1,000	20,000
C9- C10 Aromatics	--	--	--	--	--	--	--	--	--	--	100	100	100	5,000
Benzene	--	--	--	--	--	--	--	--	--	--	40	40	2	10,000
Ethylbenzene	--	--	--	--	--	--	--	--	--	--	500	500	40	10,000
Methyl Tert Butyl Ether	--	--	--	--	--	--	--	--	--	--	100	100	0.1	5,000
Naphthalene	--	--	--	--	--	--	--	--	--	--	20	500	4	10,000
Toluene	--	--	--	--	--	--	--	--	--	--	500	500	30	10,000
m,p-Xylene	--	--	--	--	--	--	--	--	--	--	100	500	100	10,000
o-Xylene	--	--	--	--	--	--	--	--	--	--	100	500	100	10,000
Total Xylenes	--	--	--	--	--	--	--	--	--	--	100	500	100	10,000

NOTES:

-- is analysis not performed.
NE is not established.
ND is not detected.
ppmv is parts per million by volume.

mg/kg is milligrams per kilogram.
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PID is photoionization detector.
EPH is extractable petroleum hydrocarbons

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TABLE 4

SUMMARY OF SOIL ANALYTICAL DATA - EPH, VPH

Maggiore Somerville
343-351 Summer Street
Somerville, Massachusetts

Sample Date	March 28, 2017										MCP Method 1 Soil Standards (mg/kg)		MCP Reportable Concentrations (mg/kg)	MCP Method 3 Upper Concentration Limits (mg/kg)
Sample ID	PC-12 10-15'	PC-12 5-10'	PC-13 0-15 'COMP	PC-13 0-5'	PC-13 10-15'	PC-13 5-10'	PC-14 0-15' COMP	PC-14 0-5'	PC-14 10-15'	PC-14 5-10'	S-1		RCS-1	
Depth (feet)	10-15	5-10	0-15	0-5	10-15	5-10	0-15	0-5	10-15	5-10				
PID (ppmv)	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	GW-2	GW-3		
EXTRACTABLE PETROLEUM HYDROCARBONS (mg/kg)														
C9-C18 Aliphatics	--	--	--	--	--	--	--	--	--	--	1,000	1,000	1,000	20,000
C19-C36 Aliphatics	--	--	--	--	--	--	--	--	--	--	3,000	3,000	3,000	20,000
C11-C22 Aromatics	--	--	--	--	--	--	--	--	--	--	1,000	1,000	1,000	10,000
Acenaphthene	--	--	--	--	--	--	--	--	--	--	1,000	1,000	4	10,000
Acenaphthylene	--	--	--	--	--	--	--	--	--	--	600	10	1	10,000
Anthracene	--	--	--	--	--	--	--	--	--	--	1,000	1,000	1,000	10,000
Benzo(a)anthracene	--	--	--	--	--	--	--	--	--	--	7	7	7	3,000
Benzo(a)pyrene	--	--	--	--	--	--	--	--	--	--	2	2	2	300
Benzo(b)fluoranthene	--	--	--	--	--	--	--	--	--	--	7	7	7	3,000
Benzo(g,h,i)perylene	--	--	--	--	--	--	--	--	--	--	1,000	1,000	1,000	10,000
Benzo(k)fluoranthene	--	--	--	--	--	--	--	--	--	--	70	70	70	10,000
Chrysene	--	--	--	--	--	--	--	--	--	--	70	70	70	10,000
Dibenz(a,h)anthracene	--	--	--	--	--	--	--	--	--	--	0.7	0.7	0.7	300
Fluoranthene	--	--	--	--	--	--	--	--	--	--	1,000	1,000	1,000	10,000
Fluorene	--	--	--	--	--	--	--	--	--	--	1,000	1,000	1,000	10,000
Indeno(1,2,3-cd)pyrene	--	--	--	--	--	--	--	--	--	--	7	7	7	3,000
2-Methylnaphthalene	--	--	--	--	--	--	--	--	--	--	80	300	0.7	5,000
Naphthalene	--	--	--	--	--	--	--	--	--	--	40	500	4	10,000
Phenanthrene	--	--	--	--	--	--	--	--	--	--	500	500	10	10,000
Pyrene	--	--	--	--	--	--	--	--	--	--	1,000	1,000	1,000	10,000
VOLATILE PETROLEUM HYDROCARBONS (mg/kg)														
C5- C8 Aliphatics	--	--	--	--	--	--	--	--	--	--	100	100	100	5,000
C9- C12 Aliphatics	--	--	--	--	--	--	--	--	--	--	1,000	1,000	1,000	20,000
C9- C10 Aromatics	--	--	--	--	--	--	--	--	--	--	100	100	100	5,000
Benzene	--	--	--	--	--	--	--	--	--	--	40	40	2	10,000
Ethylbenzene	--	--	--	--	--	--	--	--	--	--	500	500	40	10,000
Methyl Tert Butyl Ether	--	--	--	--	--	--	--	--	--	--	100	100	0.1	5,000
Naphthalene	--	--	--	--	--	--	--	--	--	--	20	500	4	10,000
Toluene	--	--	--	--	--	--	--	--	--	--	500	500	30	10,000
m,p-Xylene	--	--	--	--	--	--	--	--	--	--	100	500	100	10,000
o-Xylene	--	--	--	--	--	--	--	--	--	--	100	500	100	10,000
Total Xylenes	--	--	--	--	--	--	--	--	--	--	100	500	100	10,000

NOTES:

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NE is not established.
ND is not detected.
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TABLE 4
SUMMARY OF SOIL ANALYTICAL DATA - EPH, VPH

Maggiore Somerville
343-351 Summer Street
Somerville, Massachusetts

Sample Date	March 28, 2017										MCP Method 1 Soil Standards (mg/kg)		MCP Reportable Concentrations (mg/kg)	MCP Method 3 Upper Concentration Limits (mg/kg)
Sample ID	PC-15 0-15' COMP	PC-15 0-5'	PC-15 10-15'	PC-15 5-10'	PC-16 0-5' COMP	PC-16A 0-5'	PC-16B 0-5'	PC-16C 0-5'	PC-17 0-5' COMP	PC-17A 0-5'	S-1		RCS-1	
Depth (feet)	0-15	0-5	10-15	5-10	0-5	0-5	0-5	0-5	0-5	0-5				
PID (ppmv)	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	GW-2	GW-3		
EXTRACTABLE PETROLEUM HYDROCARBONS (mg/kg)														
C9-C18 Aliphatics	--	--	--	--	--	--	--	--	--	--	1,000	1,000	1,000	20,000
C19-C36 Aliphatics	--	--	--	--	--	--	--	--	--	--	3,000	3,000	3,000	20,000
C11-C22 Aromatics	--	--	--	--	--	--	--	--	--	--	1,000	1,000	1,000	10,000
Acenaphthene	--	--	--	--	--	--	--	--	--	--	1,000	1,000	4	10,000
Acenaphthylene	--	--	--	--	--	--	--	--	--	--	600	10	1	10,000
Anthracene	--	--	--	--	--	--	--	--	--	--	1,000	1,000	1,000	10,000
Benzo(a)anthracene	--	--	--	--	--	--	--	--	--	--	7	7	7	3,000
Benzo(a)pyrene	--	--	--	--	--	--	--	--	--	--	2	2	2	300
Benzo(b)fluoranthene	--	--	--	--	--	--	--	--	--	--	7	7	7	3,000
Benzo(g,h,i)perylene	--	--	--	--	--	--	--	--	--	--	1,000	1,000	1,000	10,000
Benzo(k)fluoranthene	--	--	--	--	--	--	--	--	--	--	70	70	70	10,000
Chrysene	--	--	--	--	--	--	--	--	--	--	70	70	70	10,000
Dibenz(a,h)anthracene	--	--	--	--	--	--	--	--	--	--	0.7	0.7	0.7	300
Fluoranthene	--	--	--	--	--	--	--	--	--	--	1,000	1,000	1,000	10,000
Fluorene	--	--	--	--	--	--	--	--	--	--	1,000	1,000	1,000	10,000
Indeno(1,2,3-cd)pyrene	--	--	--	--	--	--	--	--	--	--	7	7	7	3,000
2-Methylnaphthalene	--	--	--	--	--	--	--	--	--	--	80	300	0.7	5,000
Naphthalene	--	--	--	--	--	--	--	--	--	--	40	500	4	10,000
Phenanthrene	--	--	--	--	--	--	--	--	--	--	500	500	10	10,000
Pyrene	--	--	--	--	--	--	--	--	--	--	1,000	1,000	1,000	10,000
VOLATILE PETROLEUM HYDROCARBONS (mg/kg)														
C5- C8 Aliphatics	--	--	--	--	--	--	--	--	--	--	100	100	100	5,000
C9- C12 Aliphatics	--	--	--	--	--	--	--	--	--	--	1,000	1,000	1,000	20,000
C9- C10 Aromatics	--	--	--	--	--	--	--	--	--	--	100	100	100	5,000
Benzene	--	--	--	--	--	--	--	--	--	--	40	40	2	10,000
Ethylbenzene	--	--	--	--	--	--	--	--	--	--	500	500	40	10,000
Methyl Tert Butyl Ether	--	--	--	--	--	--	--	--	--	--	100	100	0.1	5,000
Naphthalene	--	--	--	--	--	--	--	--	--	--	20	500	4	10,000
Toluene	--	--	--	--	--	--	--	--	--	--	500	500	30	10,000
m,p-Xylene	--	--	--	--	--	--	--	--	--	--	100	500	100	10,000
o-Xylene	--	--	--	--	--	--	--	--	--	--	100	500	100	10,000
Total Xylenes	--	--	--	--	--	--	--	--	--	--	100	500	100	10,000

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<2.0 indicates not detected at or above the laboratory reporting limit of 2.0 mg/kg.
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TABLE 4

SUMMARY OF SOIL ANALYTICAL DATA - EPH, VPH

Maggiore Somerville
343-351 Summer Street
Somerville, Massachusetts

Sample Date	March 28, 2017										MCP Method 1 Soil Standards (mg/kg)		MCP Reportable Concentrations (mg/kg)	MCP Method 3 Upper Concentration Limits (mg/kg)
Sample ID	PC-17B 0-5'	PC-17C 0-5'	PC-18 0-5' COMP	PC-18A 0-5'	PC-18B 0-5'	PC-18C 0-5'	PC-19 0-5' COMP	PC-19A 0-5'	PC-19B 0-5'	PC-19C 0-5'	S-1		RCS-1	
Depth (feet)	0-5	0-5	0-5	0-5	0-5	0-5	0-5	0-5	0-5	0-5				
PID (ppmv)	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	GW-2	GW-3		
EXTRACTABLE PETROLEUM HYDROCARBONS (mg/kg)														
C9-C18 Aliphatics	--	--	--	--	--	--	--	--	--	--	1,000	1,000	1,000	20,000
C19-C36 Aliphatics	--	--	--	--	--	--	--	--	--	--	3,000	3,000	3,000	20,000
C11-C22 Aromatics	--	--	--	--	--	--	--	--	--	--	1,000	1,000	1,000	10,000
Acenaphthene	--	--	--	--	--	--	--	--	--	--	1,000	1,000	4	10,000
Acenaphthylene	--	--	--	--	--	--	--	--	--	--	600	10	1	10,000
Anthracene	--	--	--	--	--	--	--	--	--	--	1,000	1,000	1,000	10,000
Benzo(a)anthracene	--	--	--	--	--	--	--	--	--	--	7	7	7	3,000
Benzo(a)pyrene	--	--	--	--	--	--	--	--	--	--	2	2	2	300
Benzo(b)fluoranthene	--	--	--	--	--	--	--	--	--	--	7	7	7	3,000
Benzo(g,h,i)perylene	--	--	--	--	--	--	--	--	--	--	1,000	1,000	1,000	10,000
Benzo(k)fluoranthene	--	--	--	--	--	--	--	--	--	--	70	70	70	10,000
Chrysene	--	--	--	--	--	--	--	--	--	--	70	70	70	10,000
Dibenz(a,h)anthracene	--	--	--	--	--	--	--	--	--	--	0.7	0.7	0.7	300
Fluoranthene	--	--	--	--	--	--	--	--	--	--	1,000	1,000	1,000	10,000
Fluorene	--	--	--	--	--	--	--	--	--	--	1,000	1,000	1,000	10,000
Indeno(1,2,3-cd)pyrene	--	--	--	--	--	--	--	--	--	--	7	7	7	3,000
2-Methylnaphthalene	--	--	--	--	--	--	--	--	--	--	80	300	0.7	5,000
Naphthalene	--	--	--	--	--	--	--	--	--	--	40	500	4	10,000
Phenanthrene	--	--	--	--	--	--	--	--	--	--	500	500	10	10,000
Pyrene	--	--	--	--	--	--	--	--	--	--	1,000	1,000	1,000	10,000
VOLATILE PETROLEUM HYDROCARBONS (mg/kg)														
C5- C8 Aliphatics	--	--	--	--	--	--	--	--	--	--	100	100	100	5,000
C9- C12 Aliphatics	--	--	--	--	--	--	--	--	--	--	1,000	1,000	1,000	20,000
C9- C10 Aromatics	--	--	--	--	--	--	--	--	--	--	100	100	100	5,000
Benzene	--	--	--	--	--	--	--	--	--	--	40	40	2	10,000
Ethylbenzene	--	--	--	--	--	--	--	--	--	--	500	500	40	10,000
Methyl Tert Butyl Ether	--	--	--	--	--	--	--	--	--	--	100	100	0.1	5,000
Naphthalene	--	--	--	--	--	--	--	--	--	--	20	500	4	10,000
Toluene	--	--	--	--	--	--	--	--	--	--	500	500	30	10,000
m,p-Xylene	--	--	--	--	--	--	--	--	--	--	100	500	100	10,000
o-Xylene	--	--	--	--	--	--	--	--	--	--	100	500	100	10,000
Total Xylenes	--	--	--	--	--	--	--	--	--	--	100	500	100	10,000

NOTES:

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TABLE 5

SUMMARY OF SOIL ANALYTICAL DATA - ALL OTHER ANALYSES

Maggiore Somerville
343-351 Summer Street
Somerville, Massachusetts

Sample Date	August 8, 2016								August 12, 2016				MCP Method 1 Soil Standards (mg/kg)		MCP Reportable Concentrations (mg/kg)	MCP Method 3 Upper Concentration Limits (mg/kg)	TCLP Regulatory Level (mg/kg)
Sample ID	B-101	B-102	B-103	B-104	MW-105	MW-106	MW-107	MW-108	S-1	S-2	S-3	S-4	S-1				
Depth (feet)	0-10	0-10	13	0-10	13.5	9	13	13.5	8-9	8	8.5	7-8					
PID (ppmv)	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	GW-2	GW-3	RCS-1		
SEMI-VOLATILE ORGANIC COMPOUNDS 8270D (mg/kg)																	
Benzoic acid	<0.51	<0.62	--	<0.51	--	--	--	--	--	--	--	--	NE	NE	1000	NE	--
2-Chlorophenol	<0.25	<0.31	--	<0.25	--	--	--	--	--	--	--	--	100	100	0.7	3,000	--
4-Chloro-3-methyl phenol	<0.51	<0.62	--	<0.51	--	--	--	--	--	--	--	--	NE	NE	1000	NE	--
2,4-Dichlorophenol	<0.51	<0.62	--	<0.51	--	--	--	--	--	--	--	--	60	40	0.7	8,000	--
2,4-Dimethylphenol	<0.51	<0.62	--	<0.51	--	--	--	--	--	--	--	--	100	500	0.7	10,000	--
2,4-Dinitrophenol	<0.51	<0.62	--	<0.51	--	--	--	--	--	--	--	--	50	50	3	8,000	--
2-Methylphenol	<0.51	<0.62	--	<0.51	--	--	--	--	--	--	--	--	NE	NE	500	NE	--
3&4-Methylphenol	<0.51	<0.62	--	<0.51	--	--	--	--	--	--	--	--	NE	NE	500	NE	--
2-Nitrophenol	<0.51	<0.62	--	<0.51	--	--	--	--	--	--	--	--	NE	NE	100	NE	--
4-Nitrophenol	<0.51	<0.62	--	<0.51	--	--	--	--	--	--	--	--	NE	NE	100	NE	--
Pentachlorophenol	<0.51	<0.62	--	<0.51	--	--	--	--	--	--	--	--	3	3	3	700	--
Phenol	<0.25	<0.31	--	<0.25	--	--	--	--	--	--	--	--	50	20	1	10,000	--
2,4,5-Trichlorophenol	<0.51	<0.62	--	<0.51	--	--	--	--	--	--	--	--	1000	600	4	10,000	--
2,4,6-Trichlorophenol	<0.51	<0.62	--	<0.51	--	--	--	--	--	--	--	--	20	20	0.7	4,000	--
Acenaphthene	<0.10	<0.12	--	**0.2**	--	--	--	--	--	--	--	--	1000	1000	4	10,000	--
Acenaphthylene	**0.1**	**0.3**	--	**0.2**	--	--	--	--	--	--	--	--	600	10	1	10,000	--
Acetophenone	<0.51	<0.62	--	<0.51	--	--	--	--	--	--	--	--	NE	NE	1000	NE	--
Aniline	<0.51	<0.62	--	<0.51	--	--	--	--	--	--	--	--	NE	NE	1000	NE	--
Anthracene	<0.10	**0.4**	--	**0.8**	--	--	--	--	--	--	--	--	1000	1000	1000	10,000	--
Benzo(a)anthracene	**0.8**	**2.0**	--	**2.3**	--	--	--	--	--	--	--	--	7	7	7	3,000	--
Benzo(a)pyrene	**0.9**	**1.6**	--	**1.9**	--	--	--	--	--	--	--	--	2	2	2	300	--
Benzo(b)fluoranthene	**0.8**	**1.5**	--	**1.7**	--	--	--	--	--	--	--	--	7	7	7	3,000	--
Benzo(g,h,i)perylene	**0.7**	**1.1**	--	**1.1**	--	--	--	--	--	--	--	--	1000	1000	1000	10,000	--
Benzo(k)fluoranthene	**0.7**	**1.8**	--	**1.8**	--	--	--	--	--	--	--	--	70	70	70	10,000	--
4-Bromophenyl phenyl ether	<0.25	<0.31	--	<0.25	--	--	--	--	--	--	--	--	NE	NE	100	NE	--
Butyl benzyl phthalate	<0.25	<0.31	--	<0.25	--	--	--	--	--	--	--	--	NE	NE	100	NE	--
2-Chloronaphthalene	<0.25	<0.31	--	<0.25	--	--	--	--	--	--	--	--	NE	NE	1000	NE	--
4-Chloroaniline	<0.51	<0.62	--	<0.51	--	--	--	--	--	--	--	--	NE	NE	1	400	--
Chrysene	**0.6**	**1.9**	--	**2.1**	--	--	--	--	--	--	--	--	70	70	70	10,000	--
bis(2-Chloroethoxy)methane	<0.25	<0.31	--	<0.25	--	--	--	--	--	--	--	--	NE	NE	500	NE	--
bis(2-Chloroethyl)ether	<0.25	<0.31	--	<0.25	--	--	--	--	--	--	--	--	0.7	2	0.7	800	--
bis(2-Chloroisopropyl)ether	<0.25	<0.31	--	<0.25	--	--	--	--	--	--	--	--	0.7	30	0.7	10,000	--
1,2-Dichlorobenzene	<0.25	<0.31	--	<0.25	--	--	--	--	--	--	--	--	100	30	9	10,000	--
1,2-Diphenylhydrazine	<0.25	<0.31	--	<0.25	--	--	--	--	--	--	--	--	NE	NE	50	NE	--
1,3-Dichlorobenzene	<0.25	<0.31	--	<0.25	--	--	--	--	--	--	--	--	100	100	3	5,000	--
1,4-Dichlorobenzene	<0.25	<0.31	--	<0.25	--	--	--	--	--	--	--	--	1	80	0.7	10,000	--
2,4-Dinitrotoluene	<0.51	<0.62	--	<0.51	--	--	--	--	--	--	--	--	2	2	0.7	800	--
2,6-Dinitrotoluene	<0.51	<0.62	--	<0.51	--	--	--	--	--	--	--	--	NE	NE	100	NE	--
3,3'-Dichlorobenzidine	<0.51	<0.62	--	<0.51	--	--	--	--	--	--	--	--	3	3	3	1,000	--
Dibenzo(a,h)anthracene	**0.2**	**0.3**	--	**0.3**	--	--	--	--	--	--	--	--	0.7	0.7	0.7	300	--
Dibenzofuran	<0.10	<0.12	--	**0.2**	--	--	--	--	--	--	--	--	NE	NE	100	NE	--
Di-n-butyl phthalate	<0.25	<0.31	--	<0.25	--	--	--	--	--	--	--	--	NE	NE	50	NE	--
Di-n-octyl phthalate	<0.25	<0.31	--	<0.25	--	--	--	--	--	--	--	--	NE	NE	1000	NE	--
Diethyl phthalate	<0.25	<0.31	--	<0.25	--	--	--	--	--	--	--	--	200	300	10	10,000	--
Dimethyl phthalate	<0.25	<0.31	--	<0.25	--	--	--	--	--	--	--	--	50	600	0.7	10,000	--
bis(2-Ethylhexyl)phthalate	<0.25	<0.31	--	<0.25	--	--	--	--	--	--	--	--	90	90	90	10,000	--
Fluoranthene	**1.0**	**3.6**	--	**5.7**	--	--	--	--	--	--	--	--	1000	1000	1000	10,000	--
Fluorene	<0.10	<0.12	--	**0.2**	--	--	--	--	--	--	--	--	1000	1000	1000	10,000	--
Hexachlorobenzene	<0.25	<0.31	--	<0.25	--	--	--	--	--	--	--	--	0.7	0.7	0.7	8	--
Hexachlorobutadiene	<0.25	<0.31	--	<0.25	--	--	--	--	--	--	--	--	30	30	30	1,000	--
Hexachlorocyclopentadiene	<0.51	<0.62	--	<0.51	--	--	--	--	--	--	--	--	NE	NE	50	NE	--
Hexachloroethane	<0.25	<0.31	--	<0.25	--	--	--	--	--	--	--	--	3	50	0.7	2,000	--
Indeno(1,2,3-cd)pyrene	**0.7**	**1.1**	--	**1.1**	--	--	--	--	--	--	--	--	7	7	7	3,000	--
Isophorone	<0.25	<0.31	--	<0.25	--	--	--	--	--	--	--	--	NE	NE	100	NE	--
2-Methylnaphthalene	<0.10	<0.12	--	<0.10	--	--	--	--	--	--	--	--	80	300	0.7	5,000	--
Naphthalene	<0.10	<0.12	--	**0.2**	--	--	--	--	--	--	--	--	20	500	4	10,000	--
Nitrobenzene	<0.25	<0.31	--	<0.25	--	--	--	--	--	--	--	--	NE	NE	500	NE	--
N-Nitroso-di-n-propylamine	<0.25	<0.31	--	<0.25	--	--	--	--	--	--	--	--	NE	NE	50	NE	--
N-Nitrosodiphenylamine	<0.25	<0.31	--	<0.25	--	--	--	--	--	--	--	--	NE	NE	100	NE	--
Phenanthrene	**0.3**	**1.3**	--	**3.4**	--	--	--	--	--	--	--	--	500	500	10	10,000	--
Pyrene	**1.1**	**3.5**	--	**5.4**	--	--	--	--	--	--	--	--	1000	1000	1000	10,000	--
1,2,4-Trichlorobenzene	<0.25	<0.31	--	<0.25	--	--	--	--	--	--	--	--	6	700	2	10.000	--
TOTAL PETROLEUM HYDROCARBONS - GASOLINE RANGE ORGANICS 8015 (mg/kg)																	
TPH-GRO (VOA)	--	--	--	--	--	--	--	--	--	--	--	--	NE	NE	NE	NE	--
PESTICIDES 8081B (mg/kg)																	
Aldrin	--	--	--	--	--	--	--	--	--	--	--	--	0.08	0.08	0.08	30	--
alpha-BHC	--	--	--	--	--	--	--	--	--	--	--	--	NE	NE	50	NE	--
beta-BHC	--	--	--	--	--	--	--	--	--	--	--	--	NE	NE	10	NE	--
delta-BHC	--	--	--	--	--	--	--	--	--	--	--	--	NE	NE	10	NE	--
gamma-BHC (Lindane)	--	--	--	--	--	--	--	--	--	--	--	--	1	0.5	0.003	600	--
Chlordane	--	--	--	--	--	--	--	--	--	--	--	--	5	5	5	600	--
Dieldrin	--	--	--	--	--	--	--	--	--	--	--	--	0.08	0.08	0.08	30	--
4,4'-DDD	--	--	--	--	--	--	--	--	--	--	--	--	8	8	8	600	--
4,4'-DDE	--	--	--	--	--	--	--	--	--	--	--	--	6	6	6	600	--
4,4'-DDT	--	--	--	--	--	--	--	--	--	--	--	--	6	6	6	600	--
Endrin	--	--	--	--	--	--	--	--	--	--	--	--	10	10	10	200	--
Endosulfan sulfate	--	--	--	--	--	--	--	--	--	--	--	--	NE	NE	NE	NE	--
Endosulfan-I	--	--	--	--	--	--	--	--	--	--	--	--	300	1	0.5	5,000	--
Endosulfan-II	--	--	--	--	--	--	--	--	--	--	--	--	300	1	0.5	5,000	--
Heptachlor	--	--	--	--	--	--	--	--	--	--	--	--	0.3	0.3	0.3	100	--
Heptachlor epoxide	--	--	--	--	--	--	--	--	--	--	--	--	0.1	0.1	0.1	10	--
Hexachlorobenzene	--	--	--	--	--	--	--	--	--	--	--	--	0.7	0.7	0.7	8	--
Methoxychlor	--	--	--	--	--	--	--	--	--	--	--	--	200	200	200	4,000	--
Endrin ketone	--	--	--	--	--	--	--	--	--	--	--	--	NE	NE	NE	NE	--
POLYCHLORINATED BIPHENYLS 8082A (mg/kg)																	
Aroclor 1016	<0.034	<0.040	--	<0.033	--	--	--	--	--	--	--	--	1	1	1	100	--
Aroclor 1221	<0.034	<0.040	--	<0.033	--	--	--	--	--	--	--	--	1	1	1	100	--
Aroclor 1232	<0.034	<0.040	--	<0.033	--	--	--	--	--	--	--	--	1	1	1	100	--
Aroclor 1242	<0.034	<0.040	--	<0.033	--	--	--	--	--	--	--	--	1	1	1	100	--
Aroclor 1248	<0.034	<0.040	--	<0.033	--	--	--	--	--	--	--	--	1	1	1	100	--
Aroclor 1254	<0.034	<0.040	--	<0.033	--	--	--	--	--	--	--	--	1	1	1	100	--
Aroclor 1260	<0.034	<0.040	--	<0.033	--	--	--	--	--	--	--	--	1	1	1	100	--
Aroclor 1262	<0.034	<0.040	--	<0.033	--	--	--	--	--	--	--	--	1	1	1	100	--
Aroclor 1268	<0.034	<0.040	--	<0.033	--	--	--	--	--	--	--	--	1	1	1	100	--
HERBICIDES 8151 (mg/kg)																	
2,4-D	--	--	--	--	--	--	--	--	--	--	--	--	NE	NE	NE	NE	--
2,4,5-TP (Silvex)	--	--	--	--	--	--	--	--	--	--	--	--	NE	NE	NE	NE	--
2,4,5-T	--	--	--	--	--	--	--	--	--	--	--	--	NE	NE	NE	NE	--
TOTAL PETROLEUM HYDROCARBONS - DIESEL RANGE ORGANICS 8015 (mg/kg)																	
TPH-DRO (Semi-VOA)	--	--	--	--	--	--	--	--	--	--	--	--	NE	NE	NE	NE	--
TOTAL METALS (mg/kg)																	
Antimony	<0.88	<0.95	<0.99	<0.83	<0.96	<0.90	<0.96	<0.95	--	--	--	--	20	20	20	300	--
Arsenic	**5.7**	**13.5**	**15.9**	**5.9**	**1.5**	**2.2**	**12.9**	**12**	--	--	--	--	20	20	20	500	--
Barium	**21.8**	**195**	**169**	**20.7**	**11.8**	**22.9**	**95.3**	**121**	--	--	--	--	1,000	1,000	1000	10,000	--
Beryllium	**0.4**	**0.9**	**1.2**	<0.33	<0.38	<0.36	**0.8**	**0.8**	--	--	--	--	90	90	90	2,000	--
Cadmium	<0.35	**0.5**	<0.40	<0.33	<0.38	<0.36	<0.38	<0.38	--	--	--	--	70	70	70	1,000	--
Chromium	**12.9**	**40.4**	**77.2**	**9.9**	**9.7**	**13.5**	**48.5**	**53.5**	--	--	--	--	100	100	100	2,000	--
Lead	**9.1**	**431**	**18.1**	**28.3**	**2.6**	**4.1**	**11.4**	**12.8**	--	--	--	--	200	200	200	6,000	--
Mercury	<0.033	**3.0**	<0.038	<0.031	<0.033	<0.034	<0.035	<0.035	--	--	--	--	20	20	20	300	--
Nickel	**10.7**	**30.0**	**54.3**	**7.8**	**7.5**	**11.5**	**33.5**	**39.6**	--	--	--	--	600	600	20	10,000	--
Selenium	<0.88	<0.95	<2.0	<0.83	<0.96	<0.90	<0.96	<0.95	--	--	--	--	400	400	400	7,000	--
Silver	<0.44	<0.48	<0.99	<0.41	<0.48	<0.45	<0.48	<0.48	--	--	--	--	100	100	100	2,000	--
Thallium	<0.88	<0.95	<0.99	<0.83	<0.96	<0.90	<0.96	<0.95	--	--	--	--	8	8	8	800	--
Vanadium	**18.8**	**50.0**	**75.2**	**14.5**	**14.0**	**18.5**	**55.8**	**81.8**	--	--	--	--	400	400	400	7,000	--
Zinc	**25.9**	**245**	**98.2**	**35.4**	**25.9**	**28.3**	**88.5**	**78.0**	--	--	--	--	1,000	1,000	1000	10,000	--
TCLP Metals																	
Lead	--	--	--	--	--	--	--	--	--	--	--	--	--	--			5
General Chemistry																	
Cyanide Reactivity	<1.6	<1.9	--	<1.5	--	--	--	--	--	--	--	--	--	--	--	--	--
Ignitability (Flashpoint)	>230	>230	--	>230	--	--	--	--	--	--	--	--	--	--	--	--	--
Solids, Percent	**94.4**	**80**	**74**	**97.8**	**84.1**	**87.2**	**79.9**	**79.4**	--	--	--	--	--	--	--	--	--
Specific Conductivity	**180**	**378**	--	**255**	--	--	--	--	--	--	--	--	--	--	--	--	--
Sulfide Reactivity	<53	<62	--	<51	--	--	--	--	--	--	--	--	--	--	--	--	--
pH	**7.1**	**10.0**	--	**8.8**	--	--	--	--	--	--	--	--	--	--	--	--	--

NOTES:

-- is analysis not performed	mg/kg is milligrams per kilogram.	SVOC is semi-volatile organic compound
NE is not established	mg/L is milligrams per liter	<2.0 indicates not detected at or above the laboratory reporting limit of 2.0 mg/kg.
ND is not detected.	PID is photoionization detector	Analytes detected above the method reporting limit are in **Bold**
su is standard units.	ppmv is parts per million by volume.	Analytes detected above MCP Reportable Concentrations are in Red.
°F is degrees Farenheit.	µmhos/cm is micromhos per centimeter	

TABLE 5

SUMMARY OF SOIL ANALYTICAL DATA - ALL OTHER ANALYSES

Maggiore Somerville
343-351 Summer Street
Somerville, Massachusetts

Sample Date	August 12, 2016					March 28, 2017						MCP Method 1 Soil Standards (mg/kg)		MCP Reportable Concentrations (mg/kg)	MCP Method 3 Upper Concentration Limits (mg/kg)	TCLP Regulatory Level (mg/kg)
Sample ID	S-5	S-6	S-7	S-8	Stockpile	PC-1 0-15' COMP	PC-1 0-5'	PC-1 10-15'	PC-1 5-10'	PC-2 0-15' COMP	PC-2 0-5'	S-1				
Depth (feet)	7	5	6	6	NA	0-15	0-5	10-15	5-10	0-15	0-5					
PID (ppmv)	BDL	BDL	BDL	BDL	225.1	BDL	BDL	BDL	BDL	BDL	BDL	GW-2	GW-3	RCS-1		
SEMI-VOLATILE ORGANIC COMPOUNDS 8270D (mg/kg)																
Benzoic acid	--	--	--	--	<16	<0.57	--	--	--	<0.59	--	NE	NE	1000	NE	--
2-Chlorophenol	--	--	--	--	<8.0	<0.28	--	--	--	<0.30	--	100	100	0.7	3,000	--
4-Chloro-3-methyl phenol	--	--	--	--	<16	<0.57	--	--	--	<0.59	--	NE	NE	1000	NE	--
2,4-Dichlorophenol	--	--	--	--	<16	<0.57	--	--	--	<0.59	--	60	40	0.7	8,000	--
2,4-Dimethylphenol	--	--	--	--	<16	<0.57	--	--	--	<0.59	--	100	500	0.7	10,000	--
2,4-Dinitrophenol	--	--	--	--	<16	<0.57	--	--	--	<0.59	--	50	50	3	8,000	--
2-Methylphenol	--	--	--	--	<16	<0.57	--	--	--	<0.59	--	NE	NE	500	NE	--
3&4-Methylphenol	--	--	--	--	<16	<0.57	--	--	--	<0.59	--	NE	NE	500	NE	--
2-Nitrophenol	--	--	--	--	<16	<0.57	--	--	--	<0.59	--	NE	NE	100	NE	--
4-Nitrophenol	--	--	--	--	<16	<0.57	--	--	--	<0.59	--	NE	NE	100	NE	--
Pentachlorophenol	--	--	--	--	<16	<0.57	--	--	--	<0.59	--	3	3	3	700	--
Phenol	--	--	--	--	<8.0	<0.28	--	--	--	<0.30	--	50	20	1	10,000	--
2,4,5-Trichlorophenol	--	--	--	--	<16	<0.57	--	--	--	<0.59	--	1000	600	4	10,000	--
2,4,6-Trichlorophenol	--	--	--	--	<16	<0.57	--	--	--	<0.59	--	20	20	0.7	4,000	--
Acenaphthene	--	--	--	--	<3.2	1.1	--	--	--	<0.12	--	1000	1000	4	10,000	--
Acenaphthylene	--	--	--	--	<3.2	0.705	--	--	--	<0.12	--	600	10	1	10,000	--
Acetophenone	--	--	--	--	<16	<0.57	--	--	--	<0.59	--	NE	NE	1000	NE	--
Aniline	--	--	--	--	<16	<0.57	--	--	--	<0.59	--	NE	NE	1000	NE	--
Anthracene	--	--	--	--	**5.4**	**5**	--	--	--	**0.209**	--	1000	1000	1000	10,000	--
Benzo(a)anthracene	--	--	--	--	**14.9**	**11.6**	--	--	--	**0.828**	--	7	7	7	3,000	--
Benzo(a)pyrene	--	--	--	--	**13.6**	**9.02**	--	--	--	**0.58**	--	2	2	2	300	--
Benzo(b)fluoranthene	--	--	--	--	**11.7**	**9**	--	--	--	0.436	--	7	7	7	3,000	--
Benzo(g,h,i)perylene	--	--	--	--	**9.2**	**4.92**	--	--	--	0.361	--	1000	1000	1000	10,000	--
Benzo(k)fluoranthene	--	--	--	--	**10.9**	**5.88**	--	--	--	**0.5**	--	70	70	70	10,000	--
4-Bromophenyl phenyl ether	--	--	--	--	<8.0	<0.28	--	--	--	<0.30	--	NE	NE	100	NE	--
Butyl benzyl phthalate	--	--	--	--	<8.0	<0.28	--	--	--	<0.30	--	NE	NE	100	NE	--
2-Chloronaphthalene	--	--	--	--	<8.0	<0.28	--	--	--	<0.30	--	NE	NE	1000	NE	--
4-Chloroaniline	--	--	--	--	<16	<0.57	--	--	--	<0.59	--	NE	NE	1	400	--
Chrysene	--	--	--	--	**13.8**	**10.2**	--	--	--	0.542	--	70	70	70	10,000	--
bis(2-Chloroethoxy)methane	--	--	--	--	<8.0	<0.28	--	--	--	<0.30	--	NE	NE	500	NE	--
bis(2-Chloroethyl)ether	--	--	--	--	<8.0	<0.28	--	--	--	<0.30	--	0.7	2	0.7	800	--
bis(2-Chloroisopropyl)ether	--	--	--	--	<8.0	<0.28	--	--	--	<0.30	--	0.7	30	0.7	10,000	--
1,2-Dichlorobenzene	--	--	--	--	<8.0	<0.28	--	--	--	<0.30	--	100	30	9	10,000	--
1,2-Diphenylhydrazine	--	--	--	--	<8.0	<0.28	--	--	--	<0.30	--	NE	NE	50	NE	--
1,3-Dichlorobenzene	--	--	--	--	<8.0	<0.28	--	--	--	<0.30	--	100	100	3	5,000	--
1,4-Dichlorobenzene	--	--	--	--	<8.0	<0.28	--	--	--	<0.30	--	1	80	0.7	10,000	--
2,4-Dinitrotoluene	--	--	--	--	<16	<0.57	--	--	--	<0.59	--	2	2	0.7	800	--
2,6-Dinitrotoluene	--	--	--	--	<16	<0.57	--	--	--	<0.59	--	NE	NE	100	NE	--
3,3'-Dichlorobenzidine	--	--	--	--	<16	<0.57	--	--	--	<0.59	--	3	3	3	1,000	--
Dibenzo(a,h)anthracene	--	--	--	--	**3.5**	**2.06**	--	--	--	<0.12	--	0.7	0.7	0.7	300	--
Dibenzofuran	--	--	--	--	<3.2	**1.06**	--	--	--	<0.12	--	NE	NE	100	NE	--
Di-n-butyl phthalate	--	--	--	--	<8.0	<0.28	--	--	--	<0.30	--	NE	NE	50	NE	--
Di-n-octyl phthalate	--	--	--	--	<8.0	<0.28	--	--	--	<0.30	--	NE	NE	1000	NE	--
Diethyl phthalate	--	--	--	--	<8.0	<0.28	--	--	--	<0.30	--	200	300	10	10,000	--
Dimethyl phthalate	--	--	--	--	<8.0	<0.28	--	--	--	<0.30	--	50	600	0.7	10,000	--
bis(2-Ethylhexyl)phthalate	--	--	--	--	<8.0	<0.28	--	--	--	<0.30	--	90	90	90	10,000	--
Fluoranthene	--	--	--	--	**33.6**	**27.8**	--	--	--	**1.27**	--	1000	1000	1000	10,000	--
Fluorene	--	--	--	--	<3.2	**1.71**	--	--	--	<0.12	--	1000	1000	1000	10,000	--
Hexachlorobenzene	--	--	--	--	<8.0	<0.28	--	--	--	<0.30	--	0.7	0.7	0.7	8	--
Hexachlorobutadiene	--	--	--	--	<8.0	<0.28	--	--	--	<0.30	--	30	30	30	1,000	--
Hexachlorocyclopentadiene	--	--	--	--	<16	<0.57	--	--	--	<0.59	--	NE	NE	50	NE	--
Hexachloroethane	--	--	--	--	<8.0	<0.28	--	--	--	<0.30	--	3	50	0.7	2,000	--
Indeno(1,2,3-cd)pyrene	--	--	--	--	**9.6**	**5.73**	--	--	--	**0.394**	--	7	7	7	3,000	--
Isophorone	--	--	--	--	<8.0	<0.28	--	--	--	<0.30	--	NE	NE	100	NE	--
2-Methylnaphthalene	--	--	--	--	**59.4**	0.249	--	--	--	<0.12	--	80	300	0.7	5,000	--
Naphthalene	--	--	--	--	**46.3**	**0.517**	--	--	--	<0.12	--	20	500	4	10,000	--
Nitrobenzene	--	--	--	--	<8.0	<0.28	--	--	--	<0.30	--	NE	NE	500	NE	--
N-Nitroso-di-n-propylamine	--	--	--	--	<8.0	<0.28	--	--	--	<0.30	--	NE	NE	50	NE	--
N-Nitrosodiphenylamine	--	--	--	--	<8.0	<0.28	--	--	--	<0.30	--	NE	NE	100	NE	--
Phenanthrene	--	--	--	--	**16.9**	**20.8**	--	--	--	**0.781**	--	500	500	10	10,000	--
Pyrene	--	--	--	--	**28**	**21.9**	--	--	--	**1.17**	--	1000	1000	1000	10,000	--
1,2,4-Trichlorobenzene	--	--	--	--	<8.0	<0.28	--	--	--	<0.30	--	6	700	2	10,000	--
TOTAL PETROLEUM HYDROCARBONS - GASOLINE RANGE ORGANICS 8015 (mg/kg)																
TPH-GRO (VOA)	--	--	--	--	--	<5.8	--	--	--	<7.2	--	NE	NE	NE	NE	--
PESTICIDES 6081B (mg/kg)																
Aldrin	--	--	--	--	--	<0.0056	--	--	--	<0.0060	--	0.08	0.08	0.08	30	--
alpha-BHC	--	--	--	--	--	<0.0056	--	--	--	<0.0060	--	NE	NE	50	NE	--
beta-BHC	--	--	--	--	--	<0.0056	--	--	--	<0.0060	--	NE	NE	10	NE	--
delta-BHC	--	--	--	--	--	<0.0056	--	--	--	<0.0060	--	NE	NE	10	NE	--
gamma-BHC (Lindane)	--	--	--	--	--	<0.0030	--	--	--	<0.0030	--	1	0.5	0.003	600	--
Chlordane	--	--	--	--	--	<0.056	--	--	--	<0.060	--	5	5	5	600	--
Dieldrin	--	--	--	--	--	<0.0056	--	--	--	<0.0060	--	0.08	0.08	0.08	30	--
4,4'-DDD	--	--	--	--	--	<0.0056	--	--	--	<0.0060	--	8	8	8	600	--
4,4'-DDE	--	--	--	--	--	<0.0056	--	--	--	<0.0060	--	6	6	6	600	--
4,4'-DDT	--	--	--	--	--	<0.0056	--	--	--	<0.0060	--	6	6	6	600	--
Endrin	--	--	--	--	--	<0.0056	--	--	--	<0.0060	--	10	10	10	200	--
Endosulfan sulfate	--	--	--	--	--	<0.0056	--	--	--	<0.0060	--	NE	NE	NE	NE	--
Endosulfan-I	--	--	--	--	--	<0.0056	--	--	--	<0.0060	--	300	1	0.5	5,000	--
Endosulfan-II	--	--	--	--	--	<0.0056	--	--	--	<0.0060	--	300	1	0.5	5,000	--
Heptachlor	--	--	--	--	--	<0.0056	--	--	--	<0.0060	--	0.3	0.3	0.3	100	--
Heptachlor epoxide	--	--	--	--	--	<0.0056	--	--	--	<0.0060	--	0.1	0.1	0.1	10	--
Hexachlorobenzene	--	--	--	--	--	<0.0056	--	--	--	<0.0060	--	0.7	0.7	0.7	8	--
Methoxychlor	--	--	--	--	--	<0.0056	--	--	--	<0.0060	--	200	200	200	4,000	--
Endrin ketone	--	--	--	--	--	<0.0056	--	--	--	<0.0060	--	NE	NE	NE	NE	--
POLYCHLORINATED BIPHENYLS 8082A (mg/kg)																
Aroclor 1016	--	--	--	--	<0.035	<0.028	--	--	--	<0.030	--	1	1	1	100	--
Aroclor 1221	--	--	--	--	<0.035	<0.028	--	--	--	<0.030	--	1	1	1	100	--
Aroclor 1232	--	--	--	--	<0.035	<0.028	--	--	--	<0.030	--	1	1	1	100	--
Aroclor 1242	--	--	--	--	<0.035	<0.028	--	--	--	<0.030	--	1	1	1	100	--
Aroclor 1248	--	--	--	--	<0.035	<0.028	--	--	--	<0.030	--	1	1	1	100	--
Aroclor 1254	--	--	--	--	<0.035	<0.028	--	--	--	<0.030	--	1	1	1	100	--
Aroclor 1260	--	--	--	--	**0.1**	<0.028	--	--	--	<0.030	--	1	1	1	100	--
Aroclor 1262	--	--	--	--	<0.035	<0.028	--	--	--	<0.030	--	1	1	1	100	--
Aroclor 1268	--	--	--	--	<0.035	<0.028	--	--	--	<0.030	--	1	1	1	100	--
HERBICIDES 6151 (mg/kg)																
2,4-D	--	--	--	--	--	<0.019	--	--	--	<0.019	--	NE	NE	NE	NE	--
2,4,5-TP (Silvex)	--	--	--	--	--	<0.0037	--	--	--	<0.0039	--	NE	NE	NE	NE	--
2,4,5-T	--	--	--	--	--	<0.0037	--	--	--	<0.0039	--	NE	NE	NE	NE	--
TOTAL PETROLEUM HYDROCARBONS - DIESEL RANGE ORGANICS 8015 (mg/kg)																
TPH-DRO (Semi-VOA)	--	--	--	--	--	**197**	--	--	--	**26.5**	--	NE	NE	NE	NE	--
TOTAL METALS (mg/kg)																
Antimony	--	--	--	--	<0.88	--	--	--	--	--	--	20	20	20	300	--
Arsenic	--	--	--	--	**12.0**	**3.2**	--	--	--	**5.6**	--	20	20	20	500	--
Barium	--	--	--	--	**100**	**54.1**	--	--	--	**31.9**	--	1,000	1,000	1000	10,000	--
Beryllium	--	--	--	--	**0.8**	--	--	--	--	--	--	90	90	90	2,000	--
Cadmium	--	--	--	--	**0.7**	<0.58	--	--	--	<0.63	--	70	70	70	1,000	--
Chromium	--	--	--	--	**22.8**	**23.9**	--	--	--	**18.5**	--	100	100	100	2,000	--
Lead	--	--	--	--	**350**	**48.3**	**88.9**	**9.6**	**17.7**	**8.7**	**23.9**	200	200	200	6,000	--
Mercury	--	--	--	--	<0.032	<0.036	--	--	--	<0.040	--	20	20	20	300	--
Nickel	--	--	--	--	**18.1**	--	--	--	--	--	--	600	600	20	10,000	--
Selenium	--	--	--	--	<0.88	<2.3	--	--	--	<2.5	--	400	400	400	7,000	--
Silver	--	--	--	--	<0.88	**0.96**	--	--	--	**0.71**	--	100	100	100	2,000	--
Thallium	--	--	--	--	<0.88	--	--	--	--	--	--	8	8	8	800	--
Vanadium	--	--	--	--	**32.6**	--	--	--	--	--	--	400	400	400	7,000	--
Zinc	--	--	--	--	**188**	--	--	--	--	--	--	1,000	1,000	1000	10,000	--
TCLP Metals																
Lead	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5
General Chemistry																
Cyanide Reactivity	--	--	--	--	<1.6	<11	--	--	--	<12	--	--	--	--	--	--
Ignitability (Flashpoint)	--	--	--	--	>230	>200	--	--	--	>200	--	--	--	--	--	--
Solids, Percent	--	--	--	--	**90.9**	**85.5**	**82.6**	**79.6**	**90.5**	**61.4**	**63.2**	--	--	--	--	--
Specific Conductivity	--	--	--	--	**260**	**195**	--	--	--	**144**	--	--	--	--	--	--
Sulfide Reactivity	--	--	--	--	<54	<110	--	--	--	<120	--	--	--	--	--	--
pH	--	--	--	--	**7.8**	**7.58**	--	--	--	**7.8**	--	--	--	--	--	--

NOTES:

-- is analysis not performed.
NE is not established
ND is not detected
su is standard units.
°F is degrees Farenheit.

mg/kg is milligrams per kilogram.
mg/L is milligrams per liter
PID is photoionization detector
ppmv is parts per million by volume.
µmhos/cm is micromhos per centimeter

SVOC is semi-volatile organic compound
<2.0 indicates not detected at or above the laboratory reporting limit of 2.0 mg/kg
Analytes detected above the method reporting limit are in **Bold**
Analytes detected above MCP Reportable Concentrations are in **Red**

TABLE 5

SUMMARY OF SOIL ANALYTICAL DATA - ALL OTHER ANALYSES

Maggiore Somerville
343-351 Summer Street
Somerville, Massachusetts

Sample Date	March 28, 2017											MCP Method 1 Soil Standards (mg/kg)		MCP Reportable Concentrations (mg/kg)	MCP Method 3 Upper Concentration Limits (mg/kg)	TCLP Regulatory Level (mg/kg)
Sample ID	PC-2 10-15'	PC-2 5-10'	PC-3 0-15' COMP	PC-3 0-5'	PC-3 10-15'	PC-3 5-10'	PC-4 0-15' COMP	PC-4 0-5'	PC-4 10-15'	PC-4 5-10'	PC-5 0-15' COMP	S-1				
Depth (feet)	10-15	5-10	0-15	0-5	10-15	5-10	0-15	0-5	10-15	5-10	0-15					
PID (ppmv)	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	GW-2	GW-3	RCS-1		
SEMI-VOLATILE ORGANIC COMPOUNDS 8270D (mg/kg)																
Benzoic acid	--	--	<0.57	--	--	--	<0.61	--	--	--	<0.60	NE	NE	1000	NE	--
2-Chlorophenol	--	--	<0.29	--	--	--	<0.30	--	--	--	<0.30	100	100	0.7	3,000	--
4-Chloro-3-methyl phenol	--	--	<0.57	--	--	--	<0.61	--	--	--	<0.60	NE	NE	1000	NE	--
2,4-Dichlorophenol	--	--	<0.57	--	--	--	<0.61	--	--	--	<0.60	60	40	0.7	8,000	--
2,4-Dimethylphenol	--	--	<0.57	--	--	--	<0.61	--	--	--	<0.60	100	500	0.7	10,000	--
2,4-Dinitrophenol	--	--	<0.57	--	--	--	<0.61	--	--	--	<0.60	50	50	3	8,000	--
2-Methylphenol	--	--	<0.57	--	--	--	<0.61	--	--	--	<0.60	NE	NE	500	NE	--
3&4-Methylphenol	--	--	<0.57	--	--	--	<0.61	--	--	--	<0.60	NE	NE	500	NE	--
2-Nitrophenol	--	--	<0.57	--	--	--	<0.61	--	--	--	<0.60	NE	NE	100	NE	--
4-Nitrophenol	--	--	<0.57	--	--	--	<0.61	--	--	--	<0.60	NE	NE	100	NE	--
Pentachlorophenol	--	--	<0.57	--	--	--	<0.61	--	--	--	<0.60	3	3	3	700	--
Phenol	--	--	<0.29	--	--	--	<0.30	--	--	--	<0.30	50	20	1	10,000	--
2,4,5-Trichlorophenol	--	--	<0.57	--	--	--	<0.61	--	--	--	<0.60	1000	600	4	10,000	--
2,4,6-Trichlorophenol	--	--	<0.57	--	--	--	<0.61	--	--	--	<0.60	20	20	0.7	4,000	--
Acenaphthene	--	--	<0.11	--	--	--	**0.907**	--	--	--	**0.184**	1000	1000	4	10,000	--
Acenaphthylene	--	--	**0.127**	--	--	--	**2.85**	--	--	--	**0.485**	600	10	1	10,000	--
Acetophenone	--	--	<0.57	--	--	--	<0.61	--	--	--	<0.60	NE	NE	1000	NE	--
Aniline	--	--	<0.57	--	--	--	<0.61	--	--	--	<0.60	NE	NE	1000	NE	--
Anthracene	--	--	**0.3**	--	--	--	**5.5**	--	--	--	**0.529**	1000	1000	1000	10,000	--
Benzo(a)anthracene	--	--	**1.31**	--	--	--	**10.8**	--	--	--	**2.17**	7	7	7	3,000	--
Benzo(a)pyrene	--	--	**1.27**	--	--	--	**7.7**	--	--	--	**2.04**	2	2	2	300	--
Benzo(b)fluoranthene	--	--	**0.944**	--	--	--	**7.33**	--	--	--	**1.74**	7	7	7	3,000	--
Benzo(g,h,i)perylene	--	--	**0.709**	--	--	--	**3.81**	--	--	--	**1.24**	1000	1000	1000	10,000	--
Benzo(k)fluoranthene	--	--	**0.939**	--	--	--	**5.88**	--	--	--	**1.74**	70	70	70	10,000	--
4-Bromophenyl phenyl ether	--	--	<0.29	--	--	--	<0.30	--	--	--	<0.30	NE	NE	100	NE	--
Butyl benzyl phthalate	--	--	<0.29	--	--	--	<0.30	--	--	--	<0.30	NE	NE	100	NE	--
2-Chloronaphthalene	--	--	<0.29	--	--	--	<0.30	--	--	--	<0.30	NE	NE	1000	NE	--
4-Chloroaniline	--	--	<0.57	--	--	--	<0.61	--	--	--	<0.60	NE	NE	1	400	--
Chrysene	--	--	**1.13**	--	--	--	**10**	--	--	--	**2.16**	70	70	70	10,000	--
bis(2-Chloroethoxy)methane	--	--	<0.29	--	--	--	<0.30	--	--	--	<0.30	NE	NE	500	NE	--
bis(2-Chloroethyl)ether	--	--	<0.29	--	--	--	<0.30	--	--	--	<0.30	0.7	2	0.7	800	--
bis(2-Chloroisopropyl)ether	--	--	<0.29	--	--	--	<0.30	--	--	--	<0.30	0.7	30	0.7	10,000	--
1,2-Dichlorobenzene	--	--	<0.29	--	--	--	<0.30	--	--	--	<0.30	100	30	9	10,000	--
1,2-Diphenylhydrazine	--	--	<0.29	--	--	--	<0.30	--	--	--	<0.30	NE	NE	50	NE	--
1,3-Dichlorobenzene	--	--	<0.29	--	--	--	<0.30	--	--	--	<0.30	100	100	3	5,000	--
1,4-Dichlorobenzene	--	--	<0.29	--	--	--	<0.30	--	--	--	<0.30	1	80	0.7	10,000	--
2,4-Dinitrotoluene	--	--	<0.57	--	--	--	<0.61	--	--	--	<0.60	2	2	0.7	800	--
2,6-Dinitrotoluene	--	--	<0.57	--	--	--	<0.61	--	--	--	<0.60	NE	NE	100	NE	--
3,3'-Dichlorobenzidine	--	--	<0.57	--	--	--	<0.61	--	--	--	<0.60	3	3	3	1,000	--
Dibenzo(a,h)anthracene	--	--	**0.191**	--	--	--	**1.57**	--	--	--	**0.426**	0.7	0.7	0.7	300	--
Dibenzofuran	--	--	<0.11	--	--	--	**2.12**	--	--	--	**0.128**	NE	NE	100	NE	--
Di-n-butyl phthalate	--	--	<0.29	--	--	--	<0.30	--	--	--	<0.30	NE	NE	50	NE	--
Di-n-octyl phthalate	--	--	<0.29	--	--	--	<0.30	--	--	--	<0.30	NE	NE	1000	NE	--
Diethyl phthalate	--	--	<0.29	--	--	--	<0.30	--	--	--	<0.30	200	300	10	10,000	--
Dimethyl phthalate	--	--	<0.29	--	--	--	<0.30	--	--	--	<0.30	50	600	0.7	10,000	--
bis(2-Ethylhexyl)phthalate	--	--	<0.29	--	--	--	<0.30	--	--	--	<0.30	90	90	90	10,000	--
Fluoranthene	--	--	**2.43**	--	--	--	**29.4**	--	--	--	**4.11**	1000	1000	1000	10,000	--
Fluorene	--	--	<0.11	--	--	--	**4.59**	--	--	--	**0.194**	1000	1000	1000	10,000	--
Hexachlorobenzene	--	--	<0.29	--	--	--	<0.30	--	--	--	<0.30	0.7	0.7	0.7	8	--
Hexachlorobutadiene	--	--	<0.29	--	--	--	<0.30	--	--	--	<0.30	30	30	30	1,000	--
Hexachlorocyclopentadiene	--	--	<0.57	--	--	--	<0.61	--	--	--	<0.60	NE	NE	50	NE	--
Hexachloroethane	--	--	<0.29	--	--	--	<0.30	--	--	--	<0.30	3	50	0.7	2,000	--
Indeno(1,2,3-cd)pyrene	--	--	**0.782**	--	--	--	**4.71**	--	--	--	**1.39**	7	7	7	3,000	--
Isophorone	--	--	<0.29	--	--	--	<0.30	--	--	--	<0.30	NE	NE	100	NE	--
2-Methylnaphthalene	--	--	<0.11	--	--	--	**0.463**	--	--	--	<0.12	80	300	0.7	5,000	--
Naphthalene	--	--	<0.11	--	--	--	**0.259**	--	--	--	<0.12	20	500	4	10,000	--
Nitrobenzene	--	--	<0.29	--	--	--	<0.30	--	--	--	<0.30	NE	NE	500	NE	--
N-Nitroso-di-n-propylamine	--	--	<0.29	--	--	--	<0.30	--	--	--	<0.30	NE	NE	50	NE	--
N-Nitrosodiphenylamine	--	--	<0.29	--	--	--	<0.30	--	--	--	<0.30	NE	NE	100	NE	--
Phenanthrene	--	--	**1.04**	--	--	--	**33.5**	--	--	--	**2.4**	500	500	10	10,000	--
Pyrene	--	--	**2.49**	--	--	--	**23**	--	--	--	**3.91**	1000	1000	1000	10,000	--
1,2,4-Trichlorobenzene	--	--	<0.29	--	--	--	<0.30	--	--	--	<0.30	6	700	2	10,000	--
TOTAL PETROLEUM HYDROCARBONS - GASOLINE RANGE ORGANICS 8015 (mg/kg)																
TPH-GRO (VOA)	--	--	<7.2	--	--	--	<8.0	--	--	--	<8.0	NE	NE	NE	NE	--
PESTICIDES 8081B (mg/kg)																
Aldrin	--	--	<0.0057	--	--	--	<0.0061	--	--	--	<0.0062	0.08	0.08	0.08	30	--
alpha-BHC	--	--	<0.0057	--	--	--	<0.0061	--	--	--	<0.0062	NE	NE	50	NE	--
beta-BHC	--	--	<0.0057	--	--	--	<0.0061	--	--	--	<0.0062	NE	NE	10	NE	--
delta-BHC	--	--	<0.0057	--	--	--	<0.0061	--	--	--	<0.0062	NE	NE	10	NE	--
gamma-BHC (Lindane)	--	--	<0.0030	--	--	--	<0.0030	--	--	--	<0.0030	1	0.5	0.003	600	--
Chlordane	--	--	<0.057	--	--	--	<0.061	--	--	--	<0.062	5	5	5	600	--
Dieldrin	--	--	<0.0057	--	--	--	<0.0061	--	--	--	<0.0062	0.08	0.08	0.08	30	--
4,4'-DDD	--	--	<0.0057	--	--	--	<0.0061	--	--	--	<0.0062	8	8	8	600	--
4,4'-DDE	--	--	<0.0057	--	--	--	<0.0061	--	--	--	<0.0062	6	6	6	600	--
4,4'-DDT	--	--	<0.0057	--	--	--	**0.0103**	--	--	--	<0.0062	6	6	6	600	--
Endrin	--	--	<0.0057	--	--	--	<0.0061	--	--	--	<0.0062	10	10	10	200	--
Endosulfan sulfate	--	--	<0.0057	--	--	--	<0.0061	--	--	--	<0.0062	NE	NE	NE	NE	--
Endosulfan-I	--	--	<0.0057	--	--	--	<0.0061	--	--	--	<0.0062	300	1	0.5	5,000	--
Endosulfan-II	--	--	<0.0057	--	--	--	<0.0061	--	--	--	<0.0062	300	1	0.5	5,000	--
Heptachlor	--	--	<0.0057	--	--	--	<0.0061	--	--	--	<0.0062	0.3	0.3	0.3	100	--
Heptachlor epoxide	--	--	<0.0057	--	--	--	<0.0061	--	--	--	<0.0062	0.1	0.1	0.1	10	--
Hexachlorobenzene	--	--	<0.0057	--	--	--	<0.0061	--	--	--	<0.0062	0.7	0.7	0.7	8	--
Methoxychlor	--	--	<0.0057	--	--	--	<0.0061	--	--	--	<0.0062	200	200	200	4,000	--
Endrin ketone	--	--	<0.0057	--	--	--	<0.0061	--	--	--	<0.0062	NE	NE	NE	NE	--
POLYCHLORINATED BIPHENYLS 8082A (mg/kg)																
Aroclor 1016	--	--	<0.029	--	--	--	<0.031	--	--	--	<0.031	1	1	1	100	--
Aroclor 1221	--	--	<0.029	--	--	--	<0.031	--	--	--	<0.031	1	1	1	100	--
Aroclor 1232	--	--	<0.029	--	--	--	<0.031	--	--	--	<0.031	1	1	1	100	--
Aroclor 1242	--	--	<0.029	--	--	--	<0.031	--	--	--	<0.031	1	1	1	100	--
Aroclor 1248	--	--	<0.029	--	--	--	<0.031	--	--	--	<0.031	1	1	1	100	--
Aroclor 1254	--	--	<0.029	--	--	--	<0.031	--	--	--	<0.031	1	1	1	100	--
Aroclor 1260	--	--	<0.029	--	--	--	<0.031	--	--	--	<0.031	1	1	1	100	--
Aroclor 1262	--	--	<0.029	--	--	--	<0.031	--	--	--	<0.031	1	1	1	100	--
Aroclor 1268	--	--	<0.029	--	--	--	<0.031	--	--	--	<0.031	1	1	1	100	--
HERBICIDES 8151 (mg/kg)																
2,4-D	--	--	<0.019	--	--	--	<0.020	-	-	-	<0.020	NE	NE	NE	NE	
2,4,5-TP (Silvex)	--	--	<0.0039	-	--	--	<0.0041	-	-	-	<0.0039	NE	NE	NE	NE	--
2,4,5-T	--	--	<0.0039	--	--	--	<0.0041	-	-	-	<0.0039	NE	NE	NE	NE	--
TOTAL PETROLEUM HYDROCARBONS - DIESEL RANGE ORGANICS 8015 (mg/kg)																
TPH-DRO (Semi-VOA)	--	--	**135**	--	--	--	**207**	-	-	-	**58.4**	NE	NE	NE	NE	
TOTAL METALS (mg/kg)																
Antimony	--	--	--	--	--	--	--	--	--	--	--	20	20	20	300	--
Arsenic	-	-	**7.1**	-	-	-	**10.4**	-	-	-	**12.4**	20	20	20	500	--
Barium	-	-	**86.8**	-	-	-	**100**	-	-	-	**103**	1,000	1,000	1000	10,000	--
Beryllium	-	-	-	-	-	-	-	-	-	-	-	90	90	90	2,000	--
Cadmium	-	-	<0.57	-	-	-	<0.67	-	-	-	<0.64	70	70	70	1,000	--
Chromium	-	-	**27.1**	-	-	-	**38.8**	-	-	-	**40.6**	100	100	100	2,000	--
Lead	**11.2**	**8.4**	**44.7**	**20.1**	**11.3**	**8.6**	**83.5**	**99.9**	**18.8**	**22.7**	**56.6**	200	200	200	6,000	--
Mercury	-	-	<0.039	-	-	-	**0.058**	-	-	-	**0.51**	20	20	20	300	--
Nickel	-	-	-	-	-	-	-	-	-	-	-	600	600	20	10,000	--
Selenium	-	-	<2.3	-	-	-	<2.7	-	-	-	<2.6	400	400	400	7,000	--
Silver	-	-	**0.85**	-	-	-	**0.75**	-	-	-	<0.64	100	100	100	2,000	--
Thallium	-	-	-	-	-	-	-	-	-	-	-	8	8	8	800	--
Vanadium	-	-	-	-	-	-	-	-	-	-	-	400	400	400	7,000	--
Zinc	-	-	-	-	-	-	-	-	-	-	-	1,000	1,000	1000	10,000	--
TCLP Metals																
Lead	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5
General Chemistry																
Cyanide Reactivity	--	--	<12	--	--	--	<12	--	--	--	<12	--	--	--	--	--
Ignitability (Flashpoint)	--	--	>200	--	--	--	>200	--	--	--	>200	--	--	--	--	--
Solids, Percent	80.4	88	84.1	88.8	77.2	85	78.7	89.9	70.2	80.8	79	--	--	--	--	--
Specific Conductivity	--	--	241	--	--	--	387	--	--	--	812	--	--	--	--	--
Sulfide Reactivity	--	--	<120	--	--	--	<120	--	--	--	<120	--	--	--	--	--
pH	--	--	8.72	--	--	--	8.1	--	--	--	7.88	--	--	--	--	--

NOTES:

-- is analysis not performed.	mg/kg is milligrams per kilogram.	SVOC is semi-volatile organic compound
NE is not established.	mg/L is milligrams per liter	<2.0 indicates not detected at or above the laboratory reporting limit of 2.0 mg/kg
ND is not detected	PID is photoionization detector	Analytes detected above the method reporting limit are in **Bold**
su is standard units.	ppmv is parts per million by volume	Analytes detected above MCP Reportable Concentrations are in Red
°F is degrees Farenheit	µmhos/cm is micromhos per centimeter.	

TABLE 5
SUMMARY OF SOIL ANALYTICAL DATA - ALL OTHER ANALYSES

Maggiore Somerville
343-351 Summer Street
Somerville, Massachusetts

Sample Date	March 28, 2017											MCP Method 1 Soil Standards (mg/kg)		MCP Reportable Concentrations (mg/kg)	MCP Method 3 Upper Concentration Limits (mg/kg)	TCLP Regulatory Level (mg/kg)
Sample ID	PC-5 0-5'	PC-5 10-15'	PC-5 5-10'	PC-6 0-15' COMP	PC-6 0-5'	PC-6 10-15'	PC-6 5-10'	PC-7 0-15' COMP	PC-7 0-5'	PC-7 10-15'	PC-7 5-10'	S-1				
Depth (feet)	0-5	10-15	5-10	0-15	0-5	10-15	5-10	0-15	0-5	10-15	5-10					
PID (ppmv)	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	GW-2	GW-3	RCS-1		
SEMI-VOLATILE ORGANIC COMPOUNDS 8270C (mg/kg)																
Benzoic acid	--	--	--	<0.56	--	--	--	<0.58	--	--	--	NE	NE	1000	NE	--
2-Chlorophenol	--	--	--	<0.28	--	--	--	<0.29	--	--	--	100	100	0.7	3,000	--
4-Chloro-3-methyl phenol	--	--	--	<0.56	--	--	--	<0.58	--	--	--	NE	NE	1000	NE	--
2,4-Dichlorophenol	--	--	--	<0.56	--	--	--	<0.58	--	--	--	60	40	0.7	8,000	--
2,4-Dimethylphenol	--	--	--	<0.56	--	--	--	<0.58	--	--	--	100	500	0.7	10,000	--
2,4-Dinitrophenol	--	--	--	<0.56	--	--	--	<0.58	--	--	--	50	50	3	8,000	--
2-Methylphenol	--	--	--	<0.56	--	--	--	<0.58	--	--	--	NE	NE	500	NE	--
3&4-Methylphenol	--	--	--	<0.56	--	--	--	<0.58	--	--	--	NE	NE	500	NE	--
2-Nitrophenol	--	--	--	<0.56	--	--	--	<0.58	--	--	--	NE	NE	100	NE	--
4-Nitrophenol	--	--	--	<0.56	--	--	--	<0.58	--	--	--	NE	NE	100	NE	--
Pentachlorophenol	--	--	--	<0.56	--	--	--	<0.58	--	--	--	3	3	3	700	--
Phenol	--	--	--	<0.28	--	--	--	<0.29	--	--	--	50	20	1	10,000	--
2,4,5-Trichlorophenol	--	--	--	<0.56	--	--	--	<0.58	--	--	--	1000	600	4	10,000	--
2,4,6-Trichlorophenol	--	--	--	<0.56	--	--	--	<0.58	--	--	--	20	20	0.7	4,000	--
Acenaphthene	--	--	--	**0.692**	--	--	--	<0.12	--	--	--	1000	1000	4	10,000	--
Acenaphthylene	--	--	--	**1.09**	--	--	--	<0.12	--	--	--	600	10	1	10,000	--
Acetophenone	--	--	--	<0.56	--	--	--	<0.58	--	--	--	NE	NE	1000	NE	--
Aniline	--	--	--	<0.56	--	--	--	<0.58	--	--	--	NE	NE	1000	NE	--
Anthracene	--	--	--	**2.3**	--	--	--	<0.12	--	--	--	1000	1000	1000	10,000	--
Benzo(a)anthracene	--	--	--	**7.87**	--	--	--	<0.12	--	--	--	7	7	7	3,000	--
Benzo(a)pyrene	--	--	--	**8.75**	--	--	--	<0.29	--	--	--	2	2	2	300	--
Benzo(b)fluoranthene	--	--	--	**8.03**	--	--	--	<0.12	--	--	--	7	7	7	3,000	--
Benzo(g,h,i)perylene	--	--	--	**5.18**	--	--	--	<0.12	--	--	--	1000	1000	1000	10,000	--
Benzo(k)fluoranthene	--	--	--	**4.58**	--	--	--	<0.12	--	--	--	70	70	70	10,000	--
4-Bromophenyl phenyl ether	--	--	--	<0.28	--	--	--	<0.29	--	--	--	NE	NE	100	NE	--
Butyl benzyl phthalate	--	--	--	<0.28	--	--	--	<0.29	--	--	--	NE	NE	100	NE	--
2-Chloronaphthalene	--	--	--	<0.28	--	--	--	<0.29	--	--	--	NE	NE	1000	NE	--
4-Chloroaniline	--	--	--	<0.56	--	--	--	<0.58	--	--	--	NE	NE	1	400	--
Chrysene	--	--	--	**8.43**	--	--	--	<0.12	--	--	--	70	70	70	10,000	--
bis(2-Chloroethoxy)methane	--	--	--	<0.28	--	--	--	<0.29	--	--	--	NE	NE	500	NE	--
bis(2-Chloroethyl)ether	--	--	--	<0.28	--	--	--	<0.29	--	--	--	0.7	2	0.7	800	--
bis(2-Chloroisopropyl)ether	--	--	--	<0.28	--	--	--	<0.29	--	--	--	0.7	30	0.7	10,000	--
1,2-Dichlorobenzene	--	--	--	<0.28	--	--	--	<0.29	--	--	--	100	30	9	10,000	--
1,2-Diphenylhydrazine	--	--	--	<0.28	--	--	--	<0.29	--	--	--	NE	NE	50	NE	--
1,3-Dichlorobenzene	--	--	--	<0.28	--	--	--	<0.29	--	--	--	100	100	3	5,000	--
1,4-Dichlorobenzene	--	--	--	<0.28	--	--	--	<0.29	--	--	--	1	80	0.7	10,000	--
2,4-Dinitrotoluene	--	--	--	<0.56	--	--	--	<0.58	--	--	--	2	2	0.7	800	--
2,6-Dinitrotoluene	--	--	--	<0.56	--	--	--	<0.58	--	--	--	NE	NE	100	NE	--
3,3'-Dichlorobenzidine	--	--	--	<0.56	--	--	--	<0.58	--	--	--	3	3	3	1,000	--
Dibenzo(a,h)anthracene	--	--	--	**1.49**	--	--	--	<0.12	--	--	--	0.7	0.7	0.7	300	--
Dibenzofuran	--	--	--	<0.11	--	--	--	<0.12	--	--	--	NE	NE	100	NE	--
Di-n-butyl phthalate	--	--	--	<0.28	--	--	--	<0.29	--	--	--	NE	NE	50	NE	--
Di-n-octyl phthalate	--	--	--	<0.28	--	--	--	<0.29	--	--	--	NE	NE	1000	NE	--
Diethyl phthalate	--	--	--	<0.28	--	--	--	<0.29	--	--	--	200	300	10	10,000	--
Dimethyl phthalate	--	--	--	<0.28	--	--	--	<0.29	--	--	--	50	600	0.7	10,000	--
bis(2-Ethylhexyl)phthalate	--	--	--	<0.28	--	--	--	<0.29	--	--	--	90	90	90	10,000	--
Fluoranthene	--	--	--	**21.6**	--	--	--	**0.254**	--	--	--	1000	1000	1000	10,000	--
Fluorene	--	--	--	**0.866**	--	--	--	<0.12	--	--	--	1000	1000	1000	10,000	--
Hexachlorobenzene	--	--	--	<0.28	--	--	--	<0.29	--	--	--	0.7	0.7	0.7	8	--
Hexachlorobutadiene	--	--	--	<0.28	--	--	--	<0.29	--	--	--	30	30	30	1,000	--
Hexachlorocyclopentadiene	--	--	--	<0.56	--	--	--	<0.58	--	--	--	NE	NE	50	NE	--
Hexachloroethane	--	--	--	<0.28	--	--	--	<0.29	--	--	--	3	50	0.7	2,000	--
Indeno(1,2,3-cd)pyrene	--	--	--	**5.47**	--	--	--	<0.29	--	--	--	7	7	7	3,000	--
Isophorone	--	--	--	<0.28	--	--	--	<0.29	--	--	--	NE	NE	100	NE	--
2-Methylnaphthalene	--	--	--	**0.329**	--	--	--	<0.12	--	--	--	80	300	0.7	5,000	--
Naphthalene	--	--	--	**0.706**	--	--	--	<0.12	--	--	--	20	500	4	10,000	--
Nitrobenzene	--	--	--	<0.28	--	--	--	<0.29	--	--	--	NE	NE	500	NE	--
N-Nitroso-di-n-propylamine	--	--	--	<0.28	--	--	--	<0.29	--	--	--	NE	NE	50	NE	--
N-Nitrosodiphenylamine	--	--	--	<0.28	--	--	--	<0.29	--	--	--	NE	NE	100	NE	--
Phenanthrene	--	--	--	**15.1**	--	--	--	**0.136**	--	--	--	500	500	10	10,000	--
Pyrene	--	--	--	**20**	--	--	--	**0.238**	--	--	--	1000	1000	1000	10,000	--
1,2,4-Trichlorobenzene	--	--	--	<0.28	--	--	--	<0.29	--	--	--	6	700	2	10,000	--
TOTAL PETROLEUM HYDROCARBONS - GASOLINE RANGE ORGANICS 8015 (mg/kg)																
TPH-GRO (VOA)	--	--	--	<6.9	--	--	--	<7.0	--	--	--	NE	NE	NE	NE	--
PESTICIDES 8081B (mg/kg)																
Aldrin	--	--	--	<0.0056	--	--	--	<0.0058	--	--	--	0.08	0.08	0.08	30	--
alpha-BHC	--	--	--	<0.0056	--	--	--	<0.0058	--	--	--	NE	NE	50	NE	--
beta-BHC	--	--	--	<0.0056	--	--	--	<0.0058	--	--	--	NE	NE	10	NE	--
delta-BHC	--	--	--	<0.0056	--	--	--	<0.0058	--	--	--	NE	NE	10	NE	--
gamma-BHC (Lindane)	--	--	--	<0.0030	--	--	--	<0.0030	--	--	--	1	0.5	0.003	600	--
Chlordane	--	--	--	<0.056	--	--	--	<0.058	--	--	--	5	5	5	600	--
Dieldrin	--	--	--	<0.0056	--	--	--	<0.0058	--	--	--	0.08	0.08	0.08	30	--
4,4'-DDD	--	--	--	<0.0056	--	--	--	<0.0058	--	--	--	8	8	8	600	--
4,4'-DDE	--	--	--	<0.0056	--	--	--	<0.0058	--	--	--	6	6	6	600	--
4,4'-DDT	--	--	--	**0.0449**	--	--	--	<0.0058	--	--	--	6	6	6	600	--
Endrin	--	--	--	<0.0056	--	--	--	<0.0058	--	--	--	10	10	10	200	--
Endosulfan sulfate	--	--	--	<0.0056	--	--	--	<0.0058	--	--	--	NE	NE	NE	NE	--
Endosulfan-I	--	--	--	<0.0056	--	--	--	<0.0058	--	--	--	300	1	0.5	5,000	--
Endosulfan-II	--	--	--	<0.0056	--	--	--	<0.0058	--	--	--	300	1	0.5	5,000	--
Heptachlor	--	--	--	<0.0056	--	--	--	<0.0058	--	--	--	0.3	0.3	0.3	100	--
Heptachlor epoxide	--	--	--	<0.0056	--	--	--	<0.0058	--	--	--	0.1	0.1	0.1	10	--
Hexachlorobenzene	--	--	--	<0.0056	--	--	--	<0.0058	--	--	--	0.7	0.7	0.7	8	--
Methoxychlor	--	--	--	<0.0056	--	--	--	<0.0058	--	--	--	200	200	200	4,000	--
Endrin ketone	--	--	--	<0.0056	--	--	--	<0.0058	--	--	--	NE	NE	NE	NE	--
POLYCHLORINATED BIPHENYLS 8082A (mg/kg)																
Aroclor 1016	--	--	--	<0.028	--	--	--	<0.029	--	--	--	1	1	1	100	--
Aroclor 1221	--	--	--	<0.028	--	--	--	<0.029	--	--	--	1	<1	1	100	--
Aroclor 1232	--	--	--	<0.028	--	--	--	<0.029	--	--	--	1	1	1	100	--
Aroclor 1242	--	--	--	<0.028	--	--	--	<0.029	--	--	--	1	1	1	100	--
Aroclor 1248	--	--	--	<0.028	--	--	--	<0.029	--	--	--	1	1	1	100	--
Aroclor 1254	--	--	--	<0.028	--	--	--	<0.029	--	--	--	1	1	1	100	--
Aroclor 1260	--	--	--	<0.028	--	--	--	<0.029	--	--	--	1	1	1	100	--
Aroclor 1262	--	--	--	<0.028	--	--	--	<0.029	--	--	--	1	1	1	100	--
Aroclor 1268	--	--	--	<0.028	--	--	--	<0.029	--	--	--	1	1	1	100	--
HERBICIDES 8151 (mg/kg)																
2,4-D	-	-	-	<0.018	-	-	-	<0.020	-	-	-	NE	NE	NE	NE	--
2,4,5-TP (Silvex)	-	-	-	<0.0036	-	-	-	<0.0039	-	-	-	NE	NE	NE	NE	--
2,4,5-T	-	-	-	<0.0036	-	-	-	<0.0039	-	-	-	NE	NE	NE	NE	--
TOTAL PETROLEUM HYDROCARBONS - DIESEL RANGE ORGANICS 8015 (mg/kg)																
TPH-DRO (Semi-VOA)	-	-	-	**423**	-	-	-	ND (19)	-	-	-	NE	NE	NE	NE	-
TOTAL METALS (mg/kg)																
Antimony	--	--	--	--	--	--	--	--	--	--	--	20	20	20	300	--
Arsenic	-	-	-	**4.3**	-	-	-	**9.2**	-	-	-	20	20	20	500	-
Barium	-	-	-	**58**	-	-	-	**58.2**	-	-	-	1,000	1,000	1000	10,000	-
Beryllium	-	-	-	-	-	-	-	-	-	-	-	90	90	90	2,000	-
Cadmium	-	-	-	<0.59	-	-	-	<0.60	-	-	-	70	70	70	1,000	-
Chromium	-	-	-	**17.7**	-	-	-	**23**	-	-	-	100	100	100	2,000	-
Lead	**128**	**18.9**	**13.2**	**24.2**	**87.4**	**10**	**2.5**	**40.7**	**158**	**5.7**	**4.2**	200	200	200	6,000	-
Mercury	-	-	-	<0.036	-	-	-	**0.099**	-	-	-	20	20	20	300	-
Nickel	-	-	-	-	-	-	-	-	-	-	-	600	600	20	10,000	--
Selenium	-	-	-	<2.4	-	-	-	<2.4	-	-	-	400	400	400	7,000	--
Silver	-	-	-	<0.59	-	-	-	**2.5**	-	-	-	100	100	100	2,000	--
Thallium	-	-	-	-	-	-	-	-	-	-	-	8	8	8	800	-
Vanadium	-	-	-	-	-	-	-	-	-	-	-	400	400	400	7,000	-
Zinc	-	-	-	-	-	-	-	-	-	-	-	1,000	1,000	1000	10,000	-
TCLP Metals																
Lead	<0.50	--	--	--	--	--	--	--	<0.50	--	--	-	-	--	--	5
General Chemistry																
Cyanide Reactivity	--	--	--	<11	--	--	--	<11	--	--	--	--	--	--	--	--
Ignitability (Flashpoint)	--	--	--	>200	--	--	--	>200	--	--	--	--	--	--	--	--
Solids, Percent	**88**	**82.4**	**79.1**	**87.2**	**84.4**	**81.4**	**93.4**	**83**	**83.4**	**85.2**	**89**	--	--	--	--	--
Specific Conductivity	--	--	--	189	--	--	--	311	--	--	--	--	--	--	--	--
Sulfide Reactivity	--	--	--	<110	--	--	--	<110	--	--	--	--	--	--	--	--
pH	--	--	--	7.33	--	--	--	7.83	--	--	--	--	--	--	--	--

NOTES:

-- is analysis not performed	mg/kg is milligrams per kilogram.	SVOC is semi-volatile organic compound.
NE is not established	mg/L is milligrams per liter	<2.0 indicates not detected at or above the laboratory reporting limit of 2.0 mg/kg
ND is not detected	PID is photoionization detector	Analytes detected above the method reporting limit are in **Bold**
su is standard units.	ppmv is parts per million by volume.	Analytes detected above MCP Reportable Concentrations are in Red
°F is degrees Farenheit.	µmhos/cm is micromhos per centimeter	

TABLE 5

SUMMARY OF SOIL ANALYTICAL DATA - ALL OTHER ANALYSES

Maggiore Somerville
343-351 Summer Street
Somerville, Massachusetts

Sample Date	March 28, 2017										MCP Method 1 Soil Standards (mg/kg)		MCP Reportable Concentrations (mg/kg)	MCP Method 3 Upper Concentration Limits (mg/kg)	TCLP Regulatory Level (mg/kg)
Sample ID	PC-8 0-15' COMP	PC-8 0-5'	PC-8 10-15'	PC-8 5-10'	PC-9 0-15' COMP	PC-9 0-5'	PC-9 10-15'	PC-9 5-10'	PC-10 0-15' COMP	PC-10 0-5'	S-1				
Depth (feet)	0-15	0-5	10-15	5-10	0-15	0-5	10-15	5-10	0-15	0-5	GW-2	GW-3	RCS-1		
PID (ppmv)	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL					
SEMI-VOLATILE ORGANIC COMPOUNDS 8270D (mg/kg)															
Benzoic acid	<0.56	--	--	--	<0.59	--	--	--	<0.60	--	NE	NE	1000	NE	--
2-Chlorophenol	<0.28	--	--	--	<0.29	--	--	--	<0.30	--	100	100	0.7	3,000	--
4-Chloro-3-methyl phenol	<0.56	--	--	--	<0.59	--	--	--	<0.60	--	NE	NE	1000	NE	--
2,4-Dichlorophenol	<0.56	--	--	--	<0.59	--	--	--	<0.60	--	60	40	0.7	8,000	--
2,4-Dimethylphenol	<0.56	--	--	--	<0.59	--	--	--	<0.60	--	100	500	0.7	10,000	--
2,4-Dinitrophenol	<0.56	--	--	--	<0.59	--	--	--	<0.60	--	50	50	3	8,000	--
2-Methylphenol	<0.56	--	--	--	<0.59	--	--	--	<0.60	--	NE	NE	500	NE	--
3&4-Methylphenol	<0.56	--	--	--	<0.59	--	--	--	<0.60	--	NE	NE	500	NE	--
2-Nitrophenol	<0.56	--	--	--	<0.59	--	--	--	<0.60	--	NE	NE	100	NE	--
4-Nitrophenol	<0.56	--	--	--	<0.59	--	--	--	<0.60	--	NE	NE	100	NE	--
Pentachlorophenol	<0.56	--	--	--	<0.59	--	--	--	<0.60	--	3	3	3	700	--
Phenol	<0.28	--	--	--	<0.29	--	--	--	<0.30	--	50	20	1	10,000	--
2,4,5-Trichlorophenol	<0.56	--	--	--	<0.59	--	--	--	<0.60	--	1000	600	4	10,000	--
2,4,6-Trichlorophenol	<0.56	--	--	--	<0.59	--	--	--	<0.60	--	20	20	0.7	4,000	--
Acenaphthene	**0.213**	--	--	--	<0.12	--	--	--	<0.12	--	1000	1000	4	10,000	--
Acenaphthylene	<0.11	--	--	--	<0.12	--	--	--	**0.401**	--	600	10	1	10,000	--
Acetophenone	<0.56	--	--	--	<0.59	--	--	--	<0.60	--	NE	NE	1000	NE	--
Aniline	<0.56	--	--	--	<0.59	--	--	--	<0.60	--	NE	NE	1000	NE	--
Anthracene	**0.49**	--	--	--	**0.122**	--	--	--	**0.389**	--	1000	1000	1000	10,000	--
Benzo(a)anthracene	**1.32**	--	--	--	**0.413**	--	--	--	**1.29**	--	7	7	7	3,000	--
Benzo(a)pyrene	**1.27**	--	--	--	**0.43**	--	--	--	**1.31**	--	2	2	2	300	--
Benzo(b)fluoranthene	0.981	--	--	--	**0.388**	--	--	--	**0.999**	--	7	7	7	3,000	--
Benzo(g,h,i)perylene	**0.7**	--	--	--	**0.303**	--	--	--	**0.788**	--	1000	1000	1000	10,000	--
Benzo(k)fluoranthene	**0.979**	--	--	--	**0.355**	--	--	--	**1.08**	--	70	70	70	10,000	--
4-Bromophenyl phenyl ether	<0.28	--	--	--	<0.29	--	--	--	<0.30	--	NE	NE	100	NE	--
Butyl benzyl phthalate	<0.28	--	--	--	<0.29	--	--	--	<0.30	--	NE	NE	100	NE	--
2-Chloronaphthalene	<0.28	--	--	--	<0.29	--	--	--	<0.30	--	NE	NE	1000	NE	--
4-Chloroaniline	<0.56	--	--	--	<0.59	--	--	--	<0.60	--	NE	NE	1	400	--
Chrysene	**1.22**	--	--	--	**0.398**	--	--	--	**1.18**	--	70	70	70	10,000	--
bis(2-Chloroethoxy)methane	<0.28	--	--	--	<0.29	--	--	--	<0.30	--	NE	NE	500	NE	--
bis(2-Chloroethyl)ether	<0.28	--	--	--	<0.29	--	--	--	<0.30	--	0.7	2	0.7	800	--
bis(2-Chloroisopropyl)ether	<0.28	--	--	--	<0.29	--	--	--	<0.30	--	0.7	30	0.7	10,000	--
1,2-Dichlorobenzene	<0.28	--	--	--	<0.29	--	--	--	<0.30	--	100	30	9	10,000	--
1,2-Diphenylhydrazine	<0.28	--	--	--	<0.29	--	--	--	<0.30	--	NE	NE	50	NE	--
1,3-Dichlorobenzene	<0.28	--	--	--	<0.29	--	--	--	<0.30	--	100	100	3	5,000	--
1,4-Dichlorobenzene	<0.28	--	--	--	<0.29	--	--	--	<0.30	--	1	80	0.7	10,000	--
2,4-Dinitrotoluene	<0.56	--	--	--	<0.59	--	--	--	<0.60	--	2	2	0.7	800	--
2,6-Dinitrotoluene	<0.56	--	--	--	<0.59	--	--	--	<0.60	--	NE	NE	100	NE	--
3,3'-Dichlorobenzidine	<0.56	--	--	--	<0.59	--	--	--	<0.60	--	3	3	3	1,000	--
Dibenzo(a,h)anthracene	**0.235**	--	--	--	<0.12	--	--	--	**0.255**	--	0.7	0.7	0.7	300	--
Dibenzofuran	**0.113**	--	--	--	<0.12	--	--	--	<0.12	--	NE	NE	100	NE	--
Di-n-butyl phthalate	<0.28	--	--	--	<0.29	--	--	--	<0.30	--	NE	NE	50	NE	--
Di-n-octyl phthalate	<0.28	--	--	--	<0.29	--	--	--	<0.30	--	NE	NE	1000	NE	--
Diethyl phthalate	<0.28	--	--	--	<0.29	--	--	--	<0.30	--	200	300	10	10,000	--
Dimethyl phthalate	<0.28	--	--	--	<0.29	--	--	--	<0.30	--	50	600	0.7	10,000	--
bis(2-Ethylhexyl)phthalate	<0.28	--	--	--	<0.29	--	--	--	<0.30	--	90	90	90	10,000	--
Fluoranthene	**2.94**	--	--	--	**0.712**	--	--	--	**2.21**	--	1000	1000	1000	10,000	--
Fluorene	**0.158**	--	--	--	<0.12	--	--	--	**0.142**	--	1000	1000	1000	10,000	--
Hexachlorobenzene	<0.28	--	--	--	<0.29	--	--	--	<0.30	--	0.7	0.7	0.7	8	--
Hexachlorobutadiene	<0.28	--	--	--	<0.29	--	--	--	<0.30	--	30	30	30	1,000	--
Hexachlorocyclopentadiene	<0.56	--	--	--	<0.59	--	--	--	<0.60	--	NE	NE	50	NE	--
Hexachloroethane	<0.28	--	--	--	<0.29	--	--	--	<0.30	--	3	50	0.7	2,000	--
Indeno(1,2,3-cd)pyrene	**0.812**	--	--	--	**0.309**	--	--	--	**0.881**	--	7	7	7	3,000	--
Isophorone	<0.28	--	--	--	<0.29	--	--	--	<0.30	--	NE	NE	100	NE	--
2-Methylnaphthalene	<0.11	--	--	--	<0.12	--	--	--	<0.12	--	80	300	0.7	5,000	--
Naphthalene	<0.11	--	--	--	<0.12	--	--	--	<0.12	--	20	500	4	10,000	--
Nitrobenzene	<0.28	--	--	--	<0.29	--	--	--	<0.30	--	NE	NE	500	NE	--
N-Nitroso-di-n-propylamine	<0.28	--	--	--	<0.29	--	--	--	<0.30	--	NE	NE	50	NE	--
N-Nitrosodiphenylamine	<0.28	--	--	--	<0.29	--	--	--	<0.30	--	NE	NE	100	NE	--
Phenanthrene	**2.29**	--	--	--	**0.388**	--	--	--	**1.12**	--	500	500	10	10,000	--
Pyrene	**2.74**	--	--	--	**0.725**	--	--	--	**1.99**	--	1000	1000	1000	10,000	--
1,2,4-Trichlorobenzene	<0.28	--	--	--	<0.29	--	--	--	<0.30	--	6	700	2	10,000	--
TOTAL PETROLEUM HYDROCARBONS - GASOLINE RANGE ORGANICS 8015 (mg/kg)															
TPH-GRO (VOA)	<6.7	--	--	--	<7.4	--	--	--	<6.9	--	NE	NE	NE	NE	--
PESTICIDES 8081B (mg/kg)															
Aldrin	<0.0057	--	--	--	<0.0058	--	--	--	<0.0057	--	0.08	0.08	0.08	30	--
alpha-BHC	<0.0057	--	--	--	<0.0058	--	--	--	<0.0057	--	NE	NE	50	NE	--
beta-BHC	<0.0057	--	--	--	<0.0058	--	--	--	<0.0057	--	NE	NE	10	NE	--
delta-BHC	<0.0057	--	--	--	<0.0058	--	--	--	<0.0057	--	NE	NE	10	NE	--
gamma-BHC (Lindane)	<0.0030	--	--	--	<0.0030	--	--	--	<0.0030	--	1	0.5	0.003	600	--
Chlordane	<0.057	--	--	--	<0.058	--	--	--	<0.057	--	5	5	5	600	--
Dieldrin	<0.0057	--	--	--	<0.0058	--	--	--	<0.0057	--	0.08	0.08	0.08	30	--
4,4'-DDD	<0.0057	--	--	--	<0.0058	--	--	--	<0.0057	--	8	8	8	600	--
4,4'-DDE	<0.0057	--	--	--	<0.0058	--	--	--	<0.0057	--	6	6	6	600	--
4,4'-DDT	**0.0067**	--	--	--	<0.0058	--	--	--	<0.0057	--	6	6	6	600	--
Endrin	<0.0057	--	--	--	<0.0058	--	--	--	<0.0057	--	10	10	10	200	--
Endosulfan sulfate	<0.0057	--	--	--	<0.0058	--	--	--	<0.0057	--	NE	NE	NE	NE	--
Endosulfan-I	<0.0057	--	--	--	<0.0058	--	--	--	<0.0057	--	300	1	0.5	5,000	--
Endosulfan-II	<0.0057	--	--	--	<0.0058	--	--	--	<0.0057	--	300	1	0.5	5,000	--
Heptachlor	<0.0057	--	--	--	<0.0058	--	--	--	<0.0057	--	0.3	0.3	0.3	100	--
Heptachlor epoxide	<0.0057	--	--	--	<0.0058	--	--	--	<0.0057	--	0.1	0.1	0.1	10	--
Hexachlorobenzene	<0.0057	--	--	--	<0.0058	--	--	--	<0.0057	--	0.7	0.7	0.7	8	--
Methoxychlor	<0.0057	--	--	--	<0.0058	--	--	--	<0.0057	--	200	200	200	4,000	--
Endrin ketone	<0.0057	--	--	--	<0.0058	--	--	--	<0.0057	--	NE	NE	NE	NE	--
POLYCHLORINATED BIPHENYLS 8082A (mg/kg)															
Aroclor 1016	<0.028	--	--	--	<0.029	--	--	--	<0.029	--	1	1	1	100	--
Aroclor 1221	<0.028	--	--	--	<0.029	--	--	--	<0.029	--	1	1	1	100	--
Aroclor 1232	<0.028	--	--	--	<0.029	--	--	--	<0.029	--	1	1	1	100	--
Aroclor 1242	<0.028	--	--	--	<0.029	--	--	--	<0.029	--	1	1	1	100	--
Aroclor 1248	<0.028	--	--	--	<0.029	--	--	--	<0.029	--	1	1	1	100	--
Aroclor 1254	<0.028	--	--	--	<0.029	--	--	--	<0.029	--	1	1	1	100	--
Aroclor 1260	<0.028	--	--	--	<0.029	--	--	--	<0.029	--	1	1	1	100	--
Aroclor 1262	<0.028	--	--	--	<0.029	--	--	--	<0.029	--	1	1	1	100	--
Aroclor 1268	<0.028	--	--	--	<0.029	--	--	--	<0.029	--	1	1	1	100	--
HERBICIDES 8151 (mg/kg)															
2,4-D	<0.017	-	-	-	<0.018	-	-	-	<0.018	-	NE	NE	NE	NE	--
2,4,5-TP (Silvex)	<0.0034	-	-	-	<0.0036	-	-	-	<0.0036	-	NE	NE	NE	NE	--
2,4,5-T	<0.0034	-	-	-	<0.0036	-	-	-	<0.0036	-	NE	NE	NE	NE	--
TOTAL PETROLEUM HYDROCARBONS - DIESEL RANGE ORGANICS 8015 (mg/kg)															
TPH-DRO (Semi-VOA)	**18.8**	-	-	-	**39.3**	-	-	-	**52.2**	-	NE	NE	NE	NE	--
TOTAL METALS (mg/kg)															
Antimony	-	-	-	-	--	-	--	--	-	-	20	20	20	300	--
Arsenic	**9**	-	-	-	**14.4**	-	-	-	**11.3**	-	20	20	20	500	--
Barium	**51.5**	-	-	-	**88.8**	-	-	-	**105**	-	1,000	1,000	1000	10,000	--
Beryllium	-	-	-	-	-	-	-	-	-	-	90	90	90	2,000	--
Cadmium	<0.55	-	-	-	<0.61	-	-	-	<0.58	-	70	70	70	1,000	--
Chromium	**23.4**	-	-	-	**28.9**	-	-	-	**45.5**	-	100	100	100	2,000	--
Lead	**40.2**	104	12.9	2.9	**31.8**	28.2	11.5	28.2	**19**	28.80	200	200	200	6,000	--
Mercury	**0.14**	-	-	-	**3.3**	-	-	-	**0.084**	-	20	20	20	300	--
Nickel	-	-	-	-	-	-	-	-	-	-	600	600	20	10,000	--
Selenium	<2.2	-	-	-	<2.4	-	-	-	<2.3	-	400	400	400	7,000	--
Silver	**2.4**	-	-	-	**2.8**	-	-	-	**2.7**	-	100	100	100	2,000	--
Thallium	-	-	-	-	-	-	-	-	-	-	8	8	8	800	--
Vanadium	-	-	-	-	-	-	-	-	-	-	400	400	400	7,000	--
Zinc	-	-	-	-	-	-	-	-	-	-	1,000	1,000	1000	10,000	--
TCLP Metals															
Lead	--	<0.50	--	--	--	--	--	--	--	--	--	--	--	--	5
General Chemistry															
Cyanide Reactivity	<11	--	--	--	<11	-	-	-	<11	-	--	--	--	--	--
Ignitability (Flashpoint)	>200	--	--	--	>200	--	--	--	>200	--	--	--	--	--	--
Solids, Percent	**87.1**	78.4	79.5	91.5	**83.9**	87.1	75.9	85.4	**83.2**	85.3	--	--	--	--	--
Specific Conductivity	**285**	--	--	--	**282**	--	--	--	**172**	--	--	--	--	--	--
Sulfide Reactivity	<110	--	--	--	<110	--	--	--	<110	--	--	--	--	--	--
pH	**7.89**	--	--	--	**8.08**	--	--	--	**7.67**	--	--	--	--	--	--

NOTES:

-- is analysis not performed	mg/kg is milligrams per kilogram.	SVOC is semi-volatile organic compound
NE is not established.	mg/L is milligrams per liter.	<2.0 indicates not detected at or above the laboratory reporting limit of 2.0 mg/kg
ND is not detected	PID is photoionization detector.	Analytes detected above the method reporting limit are in **Bold**
su is standard units.	ppmv is parts per million by volume	Analytes detected above MCP Reportable Concentrations are in Red
°F is degrees Farenheit	µmhos/cm is micromhos per centimeter	

TABLE 5

SUMMARY OF SOIL ANALYTICAL DATA - ALL OTHER ANALYSES

Maggiore Somerville
343 351 Summer Street
Somerville, Massachusetts

Sample Date	March 28, 2017										MCP Method 1 Soil Standards (mg/kg)		MCP Reportable Concentrations (mg/kg)	MCP Method 3 Upper Concentration Limits (mg/kg)	TCLP Regulatory Level (mg/kg)
Sample ID	PC-10 10-15'	PC-10 5-10'	PC-11 0-15' COMP	PC-11 0-5'	PC-11 10-15'	PC-11 5-10'	PC-12 0-15' COMP	PC-12 0-5'	PC-12 10-15'	PC-12 5-10'	S-1				
Depth (feet)	10-15	5-10	0-15	0-5	10-15	5-10	0-15	0-5	10-15	5-10					
PID (ppmv)	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	GW-2	GW-3	RCS-1		
SEMI-VOLATILE ORGANIC COMPOUNDS 8270D (mg/kg)															
Benzoic acid	--	--	<0.57	--	--	--	<0.57	--	--	--	NE	NE	1000	NE	--
2-Chlorophenol	--	--	<0.29	--	--	--	<0.29	--	--	--	100	100	0.7	3,000	--
4-Chloro-3-methyl phenol	--	--	<0.57	--	--	--	<0.57	--	--	--	NE	NE	1000	NE	--
2,4-Dichlorophenol	--	--	<0.57	--	--	--	<0.57	--	--	--	60	40	0.7	8,000	--
2,4-Dimethylphenol	--	--	<0.57	--	--	--	<0.57	--	--	--	100	500	0.7	10,000	--
2,4-Dinitrophenol	--	--	<0.57	--	--	--	<0.57	--	--	--	50	50	3	8,000	--
2-Methylphenol	--	--	<0.57	--	--	--	<0.57	--	--	--	NE	NE	500	NE	--
3&4-Methylphenol	--	--	<0.57	--	--	--	<0.57	--	--	--	NE	NE	500	NE	--
2-Nitrophenol	--	--	<0.57	--	--	--	<0.57	--	--	--	NE	NE	100	NE	--
4-Nitrophenol	--	--	<0.57	--	--	--	<0.57	--	--	--	NE	NE	100	NE	--
Pentachlorophenol	--	--	<0.57	--	--	--	<0.57	--	--	--	3	3	3	700	--
Phenol	--	--	<0.29	--	--	--	<0.29	--	--	--	50	20	1	10,000	--
2,4,5-Trichlorophenol	--	--	<0.57	--	--	--	<0.57	--	--	--	1000	600	4	10,000	--
2,4,6-Trichlorophenol	--	--	<0.57	--	--	--	<0.57	--	--	--	20	20	0.7	4,000	--
Acenaphthene	--	--	<0.11	--	--	--	<0.11	--	--	--	1000	1000	4	10,000	--
Acenaphthylene	--	--	<0.11	--	--	--	<0.11	--	--	--	600	10	1	10,000	--
Acetophenone	--	--	<0.57	--	--	--	<0.57	--	--	--	NE	NE	1000	NE	--
Aniline	--	--	<0.57	--	--	--	<0.57	--	--	--	NE	NE	1000	NE	--
Anthracene	--	--	<0.11	--	--	--	<0.11	--	--	--	1000	1000	1000	10,000	--
Benzo(a)anthracene	--	--	**0.123**	--	--	--	<0.11	--	--	--	7	7	7	3,000	--
Benzo(a)pyrene	--	--	<0.29	--	--	--	<0.29	--	--	--	2	2	2	300	--
Benzo(b)fluoranthene	--	--	<0.11	--	--	--	<0.11	--	--	--	7	7	7	3,000	--
Benzo(g,h,i)perylene	--	--	<0.11	--	--	--	<0.11	--	--	--	1000	1000	1000	10,000	--
Benzo(k)fluoranthene	--	--	**0.117**	--	--	--	<0.11	--	--	--	70	70	70	10,000	--
4-Bromophenyl phenyl ether	--	--	<0.29	--	--	--	<0.29	--	--	--	NE	NE	100	NE	--
Butyl benzyl phthalate	--	--	<0.29	--	--	--	<0.29	--	--	--	NE	NE	100	NE	--
2-Chloronaphthalene	--	--	<0.29	--	--	--	<0.29	--	--	--	NE	NE	1000	NE	--
4-Chloroaniline	--	--	<0.57	--	--	--	<0.57	--	--	--	NE	NE	1	400	--
Chrysene	--	--	**0.118**	--	--	--	**0.115**	--	--	--	70	70	70	10,000	--
bis(2-Chloroethoxy)methane	--	--	<0.29	--	--	--	<0.29	--	--	--	NE	NE	500	NE	--
bis(2-Chloroethyl)ether	--	--	<0.29	--	--	--	<0.29	--	--	--	0.7	2	0.7	800	--
bis(2-Chloroisopropyl)ether	--	--	<0.29	--	--	--	<0.29	--	--	--	0.7	30	0.7	10,000	--
1,2-Dichlorobenzene	--	--	<0.29	--	--	--	<0.29	--	--	--	100	30	9	10,000	--
1,2-Diphenylhydrazine	--	--	<0.29	--	--	--	<0.29	--	--	--	NE	NE	50	NE	--
1,3-Dichlorobenzene	--	--	<0.29	--	--	--	<0.29	--	--	--	100	100	3	5,000	--
1,4-Dichlorobenzene	--	--	<0.29	--	--	--	<0.29	--	--	--	1	80	0.7	10,000	--
2,4-Dinitrotoluene	--	--	<0.57	--	--	--	<0.57	--	--	--	2	2	0.7	800	--
2,6-Dinitrotoluene	--	--	<0.57	--	--	--	<0.57	--	--	--	NE	NE	100	NE	--
3,3'-Dichlorobenzidine	--	--	<0.57	--	--	--	<0.57	--	--	--	3	3	3	1,000	--
Dibenzo(a,h)anthracene	--	--	<0.11	--	--	--	<0.11	--	--	--	0.7	0.7	0.7	300	--
Dibenzofuran	--	--	<0.11	--	--	--	<0.11	--	--	--	NE	NE	100	NE	--
Di-n-butyl phthalate	--	--	<0.29	--	--	--	<0.29	--	--	--	NE	NE	50	NE	--
Di-n-octyl phthalate	--	--	<0.29	--	--	--	<0.29	--	--	--	NE	NE	1000	NE	--
Diethyl phthalate	--	--	<0.29	--	--	--	<0.29	--	--	--	200	300	10	10,000	--
Dimethyl phthalate	--	--	<0.29	--	--	--	<0.29	--	--	--	50	600	0.7	10,000	--
bis(2-Ethylhexyl)phthalate	--	--	<0.29	--	--	--	<0.29	--	--	--	90	90	90	10,000	--
Fluoranthene	--	--	**0.115**	--	--	--	**0.222**	--	--	--	1000	1000	1000	10,000	--
Fluorene	--	--	<0.11	--	--	--	<0.11	--	--	--	1000	1000	1000	10,000	--
Hexachlorobenzene	--	--	<0.29	--	--	--	<0.29	--	--	--	0.7	0.7	0.7	8	--
Hexachlorobutadiene	--	--	<0.29	--	--	--	<0.29	--	--	--	30	30	30	1,000	--
Hexachlorocyclopentadiene	--	--	<0.57	--	--	--	<0.57	--	--	--	NE	NE	50	NE	--
Hexachloroethane	--	--	<0.29	--	--	--	<0.29	--	--	--	3	50	0.7	2,000	--
Indeno(1,2,3-cd)pyrene	--	--	<0.29	--	--	--	<0.29	--	--	--	7	7	7	3,000	--
Isophorone	--	--	<0.29	--	--	--	<0.29	--	--	--	NE	NE	100	NE	--
2-Methylnaphthalene	--	--	<0.11	--	--	--	<0.11	--	--	--	80	300	0.7	5,000	--
Naphthalene	--	--	<0.11	--	--	--	<0.11	--	--	--	20	500	4	10,000	--
Nitrobenzene	--	--	<0.29	--	--	--	<0.29	--	--	--	NE	NE	500	NE	--
N-Nitroso-di-n-propylamine	--	--	<0.29	--	--	--	<0.29	--	--	--	NE	NE	50	NE	--
N-Nitrosodiphenylamine	--	--	<0.29	--	--	--	<0.29	--	--	--	NE	NE	100	NE	--
Phenanthrene	--	--	<0.11	--	--	--	**0.127**	--	--	--	500	500	10	10,000	--
Pyrene	--	--	**0.123**	--	--	--	**0.209**	--	--	--	1000	1000	1000	10,000	--
1,2,4-Trichlorobenzene	--	--	<0.29	--	--	--	<0.29	--	--	--	6	700	2	10,000	--
TOTAL PETROLEUM HYDROCARBONS - GASOLINE RANGE ORGANICS 8015 (mg/kg)															
TPH-GRO (VOA)	--	--	<6.5	--	--	--	<7.0	--	--	--	NE	NE	NE	NE	--
PESTICIDES 8081B (mg/kg)															
Aldrin	--	--	<0.0057	--	--	--	<0.0059	--	--	--	0.08	0.08	0.08	30	--
alpha-BHC	--	--	<0.0057	--	--	--	<0.0059	--	--	--	NE	NE	50	NE	--
beta-BHC	--	--	<0.0057	--	--	--	<0.0059	--	--	--	NE	NE	10	NE	--
delta-BHC	--	--	<0.0057	--	--	--	<0.0059	--	--	--	NE	NE	10	NE	--
gamma-BHC (Lindane)	--	--	<0.0030	--	--	--	<0.0030	--	--	--	1	0.5	0.003	600	--
Chlordane	--	--	<0.057	--	--	--	<0.059	--	--	--	5	5	5	600	--
Dieldrin	--	--	<0.0057	--	--	--	<0.0059	--	--	--	0.08	0.08	0.08	30	--
4,4'-DDD	--	--	<0.0057	--	--	--	<0.0059	--	--	--	8	8	8	600	--
4,4'-DDE	--	--	<0.0057	--	--	--	<0.0059	--	--	--	6	6	6	600	--
4,4'-DDT	--	--	<0.0057	--	--	--	<0.0059	--	--	--	6	6	6	600	--
Endrin	--	--	<0.0057	--	--	--	<0.0059	--	--	--	10	10	10	200	--
Endosulfan sulfate	--	--	<0.0057	--	--	--	<0.0059	--	--	--	NE	NE	NE	NE	--
Endosulfan-I	--	--	<0.0057	--	--	--	<0.0059	--	--	--	300	1	0.5	5,000	--
Endosulfan-II	--	--	<0.0057	--	--	--	<0.0059	--	--	--	300	1	0.5	5,000	--
Heptachlor	--	--	<0.0057	--	--	--	<0.0059	--	--	--	0.3	0.3	0.3	100	--
Heptachlor epoxide	--	--	<0.0057	--	--	--	<0.0059	--	--	--	0.1	0.1	0.1	10	--
Hexachlorobenzene	--	--	<0.0057	--	--	--	<0.0059	--	--	--	0.7	0.7	0.7	8	--
Methoxychlor	--	--	<0.0057	--	--	--	<0.0059	--	--	--	200	200	200	4,000	--
Endrin ketone	--	--	<0.0057	--	--	--	<0.0059	--	--	--	NE	NE	NE	NE	--
POLYCHLORINATED BIPHENYLS 8082A (mg/kg)															
Aroclor 1016	--	--	<0.028	--	--	--	<0.030	--	--	--	1	1	1	100	--
Aroclor 1221	--	--	<0.028	--	--	--	<0.030	--	--	--	1	1	1	100	--
Aroclor 1232	--	--	<0.028	--	--	--	<0.030	--	--	--	1	1	1	100	--
Aroclor 1242	--	--	<0.028	--	--	--	<0.030	--	--	--	1	1	1	100	--
Aroclor 1248	--	--	<0.028	--	--	--	<0.030	--	--	--	1	1	1	100	--
Aroclor 1254	--	--	<0.028	--	--	--	<0.030	--	--	--	1	1	1	100	--
Aroclor 1260	--	--	<0.028	--	--	--	<0.030	--	--	--	1	1	1	100	--
Aroclor 1262	--	--	<0.028	--	--	--	<0.030	--	--	--	1	1	1	100	--
Aroclor 1268	--	--	<0.028	--	--	--	<0.030	--	--	--	1	1	1	100	--
HERBICIDES 8151 (mg/kg)															
2,4-D	-	-	<0.017	-	-	-	<0.020	-	-	-	NE	NE	NE	NE	--
2,4,5-TP (Silvex)	-	-	<0.0034	-	-	-	<0.0040	-	-	-	NE	NE	NE	NE	--
2,4,5-T	-	-	<0.0034	-	-	-	<0.0040	-	-	-	NE	NE	NE	NE	--
TOTAL PETROLEUM HYDROCARBONS - DIESEL RANGE ORGANICS 8015 (mg/kg)															
TPH-DRO (Semi-VOA)	-	-	**38.3**	-	-	-	**50**	-	-	-	NE	NE	NE	NE	--
TOTAL METALS (mg/kg)															
Antimony	--	-	--	-	--	--	--	-	-	-	20	20	20	300	--
Arsenic	-	-	**3.2**	-	-	-	**7.2**	-	-	-	20	20	20	500	--
Barium	-	-	**28.1**	-	-	-	**81.7**	-	-	-	1,000	1,000	1000	10,000	--
Beryllium	-	-	-	-	-	-	-	-	-	-	90	90	90	2,000	--
Cadmium	-	-	<0.58	-	-	-	**0.77**	-	-	-	70	70	70	1,000	--
Chromium	-	-	**12.9**	-	-	-	**13.9**	-	-	-	100	100	100	2,000	--
Lead	**12.2**	**8.7**	**17.9**	**15.4**	**7.4**	**10.5**	**238**	**138**	**4.1**	**488**	200	200	200	6,000	--
Mercury	-	-	**0.045**	-	-	-	**0.17**	-	-	-	20	20	20	300	--
Nickel	-	-	-	-	-	-	-	-	-	-	600	600	20	10,000	--
Selenium	-	-	<2.3	-	-	-	<2.3	-	-	-	400	400	400	7,000	--
Silver	-	-	<0.58	-	-	-	<0.57	-	-	-	100	100	100	2,000	--
Thallium	-	-	-	-	-	-	-	-	-	-	8	8	8	800	--
Vanadium	-	-	-	-	-	-	-	-	-	-	400	400	400	7,000	--
Zinc	-	-	-	-	-	-	-	-	-	-	1,000	1,000	1000	10,000	--
TCLP Metals															
Lead	--	--	--	--	--	--	<0.50	--	--	**0.84**	--	--	--	--	5
General Chemistry															
Cyanide Reactivity	--	--	<11	--	--	--	<12	--	--	--	--	--	--	--	--
Ignitability (Flashpoint)	--	--	>200	--	--	--	>200	--	--	--	--	--	--	--	--
Solids, Percent	**77.5**	**81.3**	**88.9**	**91.8**	**88**	**80.8**	**83.8**	**88.4**	**88.7**	**82.4**	--	--	--	--	--
Specific Conductivity	--	--	**158**	--	--	--	**330**	--	--	--	--	--	--	--	--
Sulfide Reactivity	--	--	<110	--	--	--	<120	--	--	--	--	--	--	--	--
pH	--	--	**8.2**	--	--	--	**7.59**	--	--	--	--	--	--	--	--

NOTES:

-- is analysis not performed	mg/kg is milligrams per kilogram.	SVOC is semi-volatile organic compound
NE is not established	mg/L is milligrams per liter	<2.0 indicates not detected at or above the laboratory reporting limit of 2.0 mg/kg
ND is not detected	PID is photoionization detector	Analytes detected above the method reporting limit are in **Bold**.
su is standard units.	ppmv is parts per million by volume.	Analytes detected above MCP Reportable Concentrations are in **Red**
°F is degrees Farenheit	µmhos/cm is micromhos per centimeter	

TABLE 5

SUMMARY OF SOIL ANALYTICAL DATA - ALL OTHER ANALYSES

Maggiore Somerville
343 351 Summer Street
Somerville, Massachusetts

Sample Date	March 28, 2017										MCP Method 1 Soil Standards (mg/kg)		MCP Reportable Concentrations (mg/kg)	MCP Method 3 Upper Concentration Limits (mg/kg)	TCLP Regulatory Level (mg/kg)
Sample ID	PC-13 0-15 'COMP	PC-13 0-5'	PC-13 10-15'	PC-13 5-10'	PC-14 0-15' COMP	PC-14 0-5'	PC-14 10-15'	PC-14 5-10'	PC-15 0-15' COMP	PC-15 0-5'	S-1				
Depth (feet)	0-15	0-5	10-15	5-10	0-15	0-5	10-15	5-10	0-15	0-5	GW-2	GW-3	RCS-1		
PID (ppmv)	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL					
SEMI-VOLATILE ORGANIC COMPOUNDS 8270D (mg/kg)															
Benzoic acid	<0.59	--	--	--	<0.57	--	--	--	<0.57	--	NE	NE	1000	NE	--
2-Chlorophenol	<0.29	--	--	--	<0.28	--	--	--	<0.29	--	100	100	0.7	3,000	--
4-Chloro-3-methyl phenol	<0.59	--	--	--	<0.57	--	--	--	<0.57	--	NE	NE	1000	NE	--
2,4-Dichlorophenol	<0.59	--	--	--	<0.57	--	--	--	<0.57	--	60	40	0.7	8,000	--
2,4-Dimethylphenol	<0.59	--	--	--	<0.57	--	--	--	<0.57	--	100	500	0.7	10,000	--
2,4-Dinitrophenol	<0.59	--	--	--	<0.57	--	--	--	<0.57	--	50	50	3	8,000	--
2-Methylphenol	<0.59	--	--	--	<0.57	--	--	--	<0.57	--	NE	NE	500	NE	--
3&4-Methylphenol	<0.59	--	--	--	<0.57	--	--	--	<0.57	--	NE	NE	500	NE	--
2-Nitrophenol	<0.59	--	--	--	<0.57	--	--	--	<0.57	--	NE	NE	100	NE	--
4-Nitrophenol	<0.59	--	--	--	<0.57	--	--	--	<0.57	--	NE	NE	100	NE	--
Pentachlorophenol	<0.59	--	--	--	<0.57	--	--	--	<0.57	--	3	3	3	700	--
Phenol	<0.29	--	--	--	<0.28	--	--	--	<0.29	--	50	20	1	10,000	--
2,4,5-Trichlorophenol	<0.59	--	--	--	<0.57	--	--	--	<0.57	--	1000	600	4	10,000	--
2,4,6-Trichlorophenol	<0.59	--	--	--	<0.57	--	--	--	<0.57	--	20	20	0.7	4,000	--
Acenaphthene	<0.12	--	--	--	<0.11	--	--	--	**0.758**	--	1000	1000	4	10,000	--
Acenaphthylene	<0.12	--	--	--	<0.11	--	--	--	<0.11	--	600	10	1	10,000	--
Acetophenone	<0.59	--	--	--	<0.57	--	--	--	<0.57	--	NE	NE	1000	NE	--
Aniline	<0.59	--	--	--	<0.57	--	--	--	<0.57	--	NE	NE	1000	NE	--
Anthracene	**0.133**	--	--	--	**0.154**	--	--	--	**1.75**	--	1000	1000	1000	10,000	--
Benzo(a)anthracene	**0.512**	--	--	--	**0.384**	--	--	--	**4.83**	--	7	7	7	3,000	--
Benzo(a)pyrene	**0.539**	--	--	--	**0.384**	--	--	--	**5.22**	--	2	2	2	300	--
Benzo(b)fluoranthene	**0.413**	--	--	--	**0.283**	--	--	--	**4.09**	--	7	7	7	3,000	--
Benzo(g,h,i)perylene	**0.304**	--	--	--	**0.217**	--	--	--	**2.88**	--	1000	1000	1000	10,000	--
Benzo(k)fluoranthene	**0.416**	--	--	--	**0.291**	--	--	--	**3.45**	--	70	70	70	10,000	--
4-Bromophenyl phenyl ether	<0.29	--	--	--	<0.28	--	--	--	<0.29	--	NE	NE	100	NE	--
Butyl benzyl phthalate	<0.29	--	--	--	<0.28	--	--	--	<0.29	--	NE	NE	100	NE	--
2-Chloronaphthalene	<0.29	--	--	--	<0.28	--	--	--	<0.29	--	NE	NE	1000	NE	--
4-Chloroaniline	<0.59	--	--	--	<0.57	--	--	--	<0.57	--	NE	NE	1	400	--
Chrysene	**0.509**	--	--	--	**0.348**	--	--	--	**4.65**	--	70	70	70	10,000	--
bis(2-Chloroethoxy)methane	<0.29	--	--	--	<0.28	--	--	--	<0.29	--	NE	NE	500	NE	--
bis(2-Chloroethyl)ether	<0.29	--	--	--	<0.28	--	--	--	<0.29	--	0.7	2	0.7	800	--
bis(2-Chloroisopropyl)ether	<0.29	--	--	--	<0.28	--	--	--	<0.29	--	0.7	30	0.7	10,000	--
1,2-Dichlorobenzene	<0.29	--	--	--	<0.28	--	--	--	<0.29	--	100	30	9	10,000	--
1,2-Diphenylhydrazine	<0.29	--	--	--	<0.28	--	--	--	<0.29	--	NE	NE	50	NE	--
1,3-Dichlorobenzene	<0.29	--	--	--	<0.28	--	--	--	<0.29	--	100	100	3	5,000	--
1,4-Dichlorobenzene	<0.29	--	--	--	<0.28	--	--	--	<0.29	--	1	80	0.7	10,000	--
2,4-Dinitrotoluene	<0.59	--	--	--	<0.57	--	--	--	<0.57	--	2	2	0.7	800	--
2,6-Dinitrotoluene	<0.59	--	--	--	<0.57	--	--	--	<0.57	--	NE	NE	100	NE	--
3,3'-Dichlorobenzidine	<0.59	--	--	--	<0.57	--	--	--	<0.57	--	3	3	3	1,000	--
Dibenzo(a,h)anthracene	<0.12	--	--	--	<0.11	--	--	--	**1.05**	--	0.7	0.7	0.7	300	--
Dibenzofuran	<0.12	--	--	--	<0.11	--	--	--	**0.294**	--	NE	NE	100	NE	--
Di-n-butyl phthalate	<0.29	--	--	--	<0.28	--	--	--	<0.29	--	NE	NE	50	NE	--
Di-n-octyl phthalate	<0.29	--	--	--	<0.28	--	--	--	<0.29	--	NE	NE	1000	NE	--
Diethyl phthalate	<0.29	--	--	--	<0.28	--	--	--	<0.29	--	200	300	10	10,000	--
Dimethyl phthalate	<0.29	--	--	--	<0.28	--	--	--	<0.29	--	50	600	0.7	10,000	--
bis(2-Ethylhexyl)phthalate	<0.29	--	--	--	<0.28	--	--	--	<0.29	--	90	90	90	10,000	--
Fluoranthene	**1.02**	--	--	--	**0.882**	--	--	--	**10.7**	--	1000	1000	1000	10,000	--
Fluorene	<0.12	--	--	--	<0.11	--	--	--	**0.537**	--	1000	1000	1000	10,000	--
Hexachlorobenzene	<0.29	--	--	--	<0.28	--	--	--	<0.29	--	0.7	0.7	0.7	8	--
Hexachlorobutadiene	<0.29	--	--	--	<0.28	--	--	--	<0.29	--	30	30	30	1,000	--
Hexachlorocyclopentadiene	<0.59	--	--	--	<0.57	--	--	--	<0.57	--	NE	NE	50	NE	--
Hexachloroethane	<0.29	--	--	--	<0.28	--	--	--	<0.29	--	3	50	0.7	2,000	--
Indeno(1,2,3-cd)pyrene	**0.335**	--	--	--	<0.28	--	--	--	**3.21**	--	7	7	7	3,000	--
Isophorone	<0.29	--	--	--	<0.28	--	--	--	<0.29	--	NE	NE	100	NE	--
2-Methylnaphthalene	<0.12	--	--	--	<0.11	--	--	--	**0.133**	--	80	300	0.7	5,000	--
Naphthalene	<0.12	--	--	--	<0.11	--	--	--	**0.158**	--	20	500	4	10,000	--
Nitrobenzene	<0.29	--	--	--	<0.28	--	--	--	<0.29	--	NE	NE	500	NE	--
N-Nitroso-di-n-propylamine	<0.29	--	--	--	<0.28	--	--	--	<0.29	--	NE	NE	50	NE	--
N-Nitrosodiphenylamine	<0.29	--	--	--	<0.28	--	--	--	<0.29	--	NE	NE	100	NE	--
Phenanthrene	**0.579**	--	--	--	**0.624**	--	--	--	**7.19**	--	500	500	10	10,000	--
Pyrene	**0.955**	--	--	--	**0.759**	--	--	--	**10.1**	--	1000	1000	1000	10,000	--
1,2,4-Trichlorobenzene	<0.29	--	--	--	<0.28	--	--	--	<0.29	--	6	700	2	10,000	--
TOTAL PETROLEUM HYDROCARBONS - GASOLINE RANGE ORGANICS 8015 (mg/kg)															
TPH-GRO (VOA)	<6.5	--	--	--	<6.6	--	--	--	<7.0	--	NE	NE	NE	NE	--
PESTICIDES 8081B (mg/kg)															
Aldrin	<0.0056	--	--	--	<0.0056	--	--	--	<0.0058	--	0.08	0.08	0.08	30	--
alpha-BHC	<0.0056	--	--	--	<0.0056	--	--	--	<0.0058	--	NE	NE	50	NE	--
beta-BHC	<0.0056	--	--	--	<0.0056	--	--	--	<0.0058	--	NE	NE	10	NE	--
delta-BHC	<0.0056	--	--	--	<0.0056	--	--	--	<0.0058	--	NE	NE	10	NE	--
gamma-BHC (Lindane)	<0.0030	--	--	--	<0.0030	--	--	--	<0.0030	--	1	0.5	0.003	600	--
Chlordane	<0.056	--	--	--	<0.056	--	--	--	<0.058	--	5	5	5	600	--
Dieldrin	<0.0056	--	--	--	<0.0056	--	--	--	<0.0058	--	0.08	0.08	0.08	30	--
4,4'-DDD	<0.0056	--	--	--	<0.0056	--	--	--	<0.0058	--	8	8	8	600	--
4,4'-DDE	<0.0056	--	--	--	<0.0056	--	--	--	<0.0058	--	6	6	6	600	--
4,4'-DDT	<0.0056	--	--	--	<0.0056	--	--	--	<0.0058	--	6	6	6	600	--
Endrin	<0.0056	--	--	--	<0.0056	--	--	--	<0.0058	--	10	10	10	200	--
Endosulfan sulfate	<0.0056	--	--	--	<0.0056	--	--	--	<0.0058	--	NE	NE	NE	NE	--
Endosulfan-I	<0.0056	--	--	--	<0.0056	--	--	--	<0.0058	--	300	1	0.5	5,000	--
Endosulfan-II	<0.0056	--	--	--	<0.0056	--	--	--	<0.0058	--	300	1	0.5	5,000	--
Heptachlor	<0.0056	--	--	--	<0.0056	--	--	--	<0.0058	--	0.3	0.3	0.3	100	--
Heptachlor epoxide	<0.0056	--	--	--	<0.0056	--	--	--	<0.0058	--	0.1	0.1	0.1	10	--
Hexachlorobenzene	<0.0056	--	--	--	<0.0056	--	--	--	<0.0058	--	0.7	0.7	0.7	8	--
Methoxychlor	<0.0056	--	--	--	<0.0056	--	--	--	<0.0058	--	200	200	200	4,000	--
Endrin ketone	<0.0056	--	--	--	<0.0056	--	--	--	<0.0058	--	NE	NE	NE	NE	--
POLYCHLORINATED BIPHENYLS 8082A (mg/kg)															
Aroclor 1016	<0.028	--	--	--	<0.028	--	--	--	<0.029	--	1	1	1	100	--
Aroclor 1221	<0.028	--	--	--	<0.028	--	--	--	<0.029	--	1	1	1	100	--
Aroclor 1232	<0.028	--	--	--	<0.028	--	--	--	<0.029	--	1	1	1	100	--
Aroclor 1242	<0.028	--	--	--	<0.028	--	--	--	<0.029	--	1	1	1	100	--
Aroclor 1248	<0.028	--	--	--	<0.028	--	--	--	<0.029	--	1	1	1	100	--
Aroclor 1254	<0.028	--	--	--	<0.028	--	--	--	<0.029	--	1	1	1	100	--
Aroclor 1260	<0.028	--	--	--	<0.028	--	--	--	<0.029	--	1	1	1	100	--
Aroclor 1262	<0.028	--	--	--	<0.028	--	--	--	<0.029	--	1	1	1	100	--
Aroclor 1268	<0.028	--	--	--	<0.028	--	--	--	<0.029	--	1	1	1	100	--
HERBICIDES 8151 (mg/kg)															
2,4-D	<0.018	--	--	--	<0.019	--	--	--	<0.019	--	NE	NE	NE	NE	--
2,4,5-TP (Silvex)	<0.0037	--	--	--	<0.0037	--	--	--	<0.0038	--	NE	NE	NE	NE	--
2,4,5-T	<0.0037	--	--	--	<0.0037	--	--	--	<0.0038	--	NE	NE	NE	NE	--
TOTAL PETROLEUM HYDROCARBONS - DIESEL RANGE ORGANICS 8015 (mg/kg)															
TPH-DRO (Semi-VOA)	**41.9**	--	--	--	**33.3**	--	--	--	**976**	--	NE	NE	NE	NE	--
TOTAL METALS (mg/kg)															
Antimony	--	--	--	--	--	--	--	--	--	--	20	20	20	300	--
Arsenic	**3.5**	--	--	--	**2.5**	--	--	--	**5.4**	--	20	20	20	500	--
Barium	**38.5**	--	--	--	**16.3**	--	--	--	**59.1**	--	1,000	1,000	1000	10,000	--
Beryllium	--	--	--	--	--	--	--	--	--	--	90	90	90	2,000	--
Cadmium	<0.58	--	--	--	<0.59	--	--	--	<0.59	--	70	70	70	1,000	--
Chromium	**12.8**	--	--	--	**8.2**	--	--	--	**20.1**	--	100	100	100	2,000	--
Lead	**71.7**	**340**	**4.8**	**82.3**	**22.8**	**23.9**	**2.4**	**59.8**	**72.6**	**197**	200	200	200	6,000	--
Mercury	**0.8**	--	--	--	**0.11**	--	--	--	**0.2**	--	20	20	20	300	--
Nickel	--	--	--	--	--	--	--	--	--	--	600	600	20	10,000	--
Selenium	<2.3	--	--	--	<2.4	--	--	--	<2.3	--	400	400	400	7,000	--
Silver	<0.58	--	--	--	<0.59	--	--	--	<0.59	--	100	100	100	2,000	--
Thallium	--	--	--	--	--	--	--	--	--	--	8	8	8	800	--
Vanadium	--	--	--	--	--	--	--	--	--	--	400	400	400	7,000	--
Zinc	--	--	--	--	--	--	--	--	--	--	1,000	1,000	1000	10,000	--
TCLP Metals															
Lead	--	<0.50	--	--	--	--	--	--	--	<0.50	--	--	--	--	5
General Chemistry															
Cyanide Reactivity	<11	--	--	--	<11	--	--	--	<11	--	--	--	--	--	--
Ignitability (Flashpoint)	>200	--	--	--	>200	--	--	--	>200	--	--	--	--	--	--
Solids, Percent	**84.9**	**82.5**	**88.9**	**81.4**	**87.3**	**90.1**	**85.8**	**82.5**	**83.7**	**84**	--	--	--	--	--
Specific Conductivity	**1380**	--	--	--	**240**	--	--	--	**330**	--	--	--	--	--	--
Sulfide Reactivity	<110	--	--	--	<110	--	--	--	<110	--	--	--	--	--	--
pH	**8.38**	--	--	--	**7.28**	--	--	--	**7.51**	--	--	--	--	--	--

NOTES:

-- is analysis not performed	mg/kg is milligrams per kilogram	SVOC is semi-volatile organic compound
NE is not established	mg/L is milligrams per liter	<2.0 indicates not detected at or above the laboratory reporting limit of 2.0 mg/kg
ND is not detected	PID is photoionization detector	Analytes detected above the method reporting limit are in **Bold**
su is standard units.	ppmv is parts per million by volume	Analytes detected above MCP Reportable Concentrations are in Red
°F is degrees Farenheit.	µmhos/cm is micromhos per centimeter	

TABLE 5
SUMMARY OF SOIL ANALYTICAL DATA - ALL OTHER ANALYSES

Maggiore Somerville
343-351 Summer Street
Somerville, Massachusetts

Sample Date	March 28, 2017										MCP Method 1 Soil Standards (mg/kg)		MCP Reportable Concentrations (mg/kg)	MCP Method 3 Upper Concentration Limits (mg/kg)	TCLP Regulatory Level (mg/kg)
Sample ID	PC-15 10-15'	PC-15 5-10'	PC-16 0-5' COMP	PC-16A 0-5'	PC-16B 0-5'	PC-16C 0-5'	PC-17 0-5' COMP	PC-17A 0-5'	PC-17B 0-5'	PC-17C 0-5'	S-1				
Depth (feet)	10-15	5-10	0-5	0-5	0-5	0-5	0-5	0-5	0-5	0-5	GW-2	GW-3	RCS-1		
PID (ppmv)	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL					
SEMI-VOLATILE ORGANIC COMPOUNDS 8270D (mg/kg)															
Benzoic acid	--	--	<0.59	--	--	--	<0.57	--	--	--	NE	NE	1000	NE	--
2-Chlorophenol	--	--	<0.29	--	--	--	<0.29	--	--	--	100	100	0.7	3,000	--
4-Chloro-3-methyl phenol	--	--	<0.59	--	--	--	<0.57	--	--	--	NE	NE	1000	NE	--
2,4-Dichlorophenol	--	--	<0.59	--	--	--	<0.57	--	--	--	60	40	0.7	8,000	--
2,4-Dimethylphenol	--	--	<0.59	--	--	--	<0.57	--	--	--	100	500	0.7	10,000	--
2,4-Dinitrophenol	--	--	<0.59	--	--	--	<0.57	--	--	--	50	50	3	8,000	--
2-Methylphenol	--	--	<0.59	--	--	--	<0.57	--	--	--	NE	NE	500	NE	--
3&4-Methylphenol	--	--	<0.59	--	--	--	<0.57	--	--	--	NE	NE	500	NE	--
2-Nitrophenol	--	--	<0.59	--	--	--	<0.57	--	--	--	NE	NE	100	NE	--
4-Nitrophenol	--	--	<0.59	--	--	--	<0.57	--	--	--	NE	NE	100	NE	--
Pentachlorophenol	--	--	<0.59	--	--	--	<0.57	--	--	--	3	3	3	700	--
Phenol	--	--	<0.29	--	--	--	<0.29	--	--	--	50	20	1	10,000	--
2,4,5-Trichlorophenol	--	--	<0.59	--	--	--	<0.57	--	--	--	1000	600	4	10,000	--
2,4,6-Trichlorophenol	--	--	<0.59	--	--	--	<0.57	--	--	--	20	20	0.7	4,000	--
Acenaphthene	--	--	<0.12	--	--	--	**0.713**	--	--	--	1000	1000	4	10,000	--
Acenaphthylene	--	--	<0.12	--	--	--	**0.14**	--	--	--	600	10	1	10,000	--
Acetophenone	--	--	<0.59	--	--	--	<0.57	--	--	--	NE	NE	1000	NE	--
Aniline	--	--	<0.59	--	--	--	<0.57	--	--	--	NE	NE	1000	NE	--
Anthracene	--	--	<0.12	--	--	--	**1.43**	--	--	--	1000	1000	1000	10,000	--
Benzo(a)anthracene	--	--	**0.314**	--	--	--	**3.28**	--	--	--	7	7	7	3,000	--
Benzo(a)pyrene	--	--	**0.374**	--	--	--	**3.4**	--	--	--	2	2	2	300	--
Benzo(b)fluoranthene	--	--	**0.297**	--	--	--	**2.73**	--	--	--	7	7	7	3,000	--
Benzo(g,h,i)perylene	--	--	**0.256**	--	--	--	**1.72**	--	--	--	1000	1000	1000	10,000	--
Benzo(k)fluoranthene	--	--	**0.295**	--	--	--	**2.37**	--	--	--	70	70	70	10,000	--
4-Bromophenyl phenyl ether	--	--	<0.29	--	--	--	<0.29	--	--	--	NE	NE	100	NE	--
Butyl benzyl phthalate	--	--	<0.29	--	--	--	<0.29	--	--	--	NE	NE	100	NE	--
2-Chloronaphthalene	--	--	<0.29	--	--	--	<0.29	--	--	--	NE	NE	1000	NE	--
4-Chloroaniline	--	--	<0.59	--	--	--	<0.57	--	--	--	NE	NE	1	400	--
Chrysene	--	--	**0.349**	--	--	--	**3.1**	--	--	--	70	70	70	10,000	--
bis(2-Chloroethoxy)methane	--	--	<0.29	--	--	--	<0.29	--	--	--	NE	NE	500	NE	--
bis(2-Chloroethyl)ether	--	--	<0.29	--	--	--	<0.29	--	--	--	0.7	2	0.7	800	--
bis(2-Chloroisopropyl)ether	--	--	<0.29	--	--	--	<0.29	--	--	--	0.7	30	0.7	10,000	--
1,2-Dichlorobenzene	--	--	<0.29	--	--	--	<0.29	--	--	--	100	30	9	10,000	--
1,2-Diphenylhydrazine	--	--	<0.29	--	--	--	<0.29	--	--	--	NE	NE	50	NE	--
1,3-Dichlorobenzene	--	--	<0.29	--	--	--	<0.29	--	--	--	100	100	3	5,000	--
1,4-Dichlorobenzene	--	--	<0.29	--	--	--	<0.29	--	--	--	1	80	0.7	10,000	--
2,4-Dinitrotoluene	--	--	<0.59	--	--	--	<0.57	--	--	--	2	2	0.7	800	--
2,6-Dinitrotoluene	--	--	<0.59	--	--	--	<0.57	--	--	--	NE	NE	100	NE	--
3,3'-Dichlorobenzidine	--	--	<0.59	--	--	--	<0.57	--	--	--	3	3	3	1,000	--
Dibenzo(a,h)anthracene	--	--	<0.12	--	--	--	**0.651**	--	--	--	0.7	0.7	0.7	300	--
Dibenzofuran	--	--	<0.12	--	--	--	**0.368**	--	--	--	NE	NE	100	NE	--
Di-n-butyl phthalate	--	--	<0.29	--	--	--	<0.29	--	--	--	NE	NE	50	NE	--
Di-n-octyl phthalate	--	--	<0.29	--	--	--	<0.29	--	--	--	NE	NE	1000	NE	--
Diethyl phthalate	--	--	<0.29	--	--	--	<0.29	--	--	--	200	300	10	10,000	--
Dimethyl phthalate	--	--	<0.29	--	--	--	<0.29	--	--	--	50	600	0.7	10,000	--
bis(2-Ethylhexyl)phthalate	--	--	<0.29	--	--	--	<0.29	--	--	--	90	90	90	10,000	--
Fluoranthene	--	--	**0.541**	--	--	--	**6.6**	--	--	--	1000	1000	1000	10,000	--
Fluorene	--	--	<0.12	--	--	--	**0.575**	--	--	--	1000	1000	1000	10,000	--
Hexachlorobenzene	--	--	<0.29	--	--	--	<0.29	--	--	--	0.7	0.7	0.7	8	--
Hexachlorobutadiene	--	--	<0.29	--	--	--	<0.29	--	--	--	30	30	30	1,000	--
Hexachlorocyclopentadiene	--	--	<0.59	--	--	--	<0.57	--	--	--	NE	NE	50	NE	--
Hexachloroethane	--	--	<0.29	--	--	--	<0.29	--	--	--	3	50	0.7	2,000	--
Indeno(1,2,3-cd)pyrene	--	--	<0.29	--	--	--	**1.88**	--	--	--	7	7	7	3,000	--
Isophorone	--	--	<0.29	--	--	--	<0.29	--	--	--	NE	NE	100	NE	--
2-Methylnaphthalene	--	--	<0.12	--	--	--	**0.218**	--	--	--	80	300	0.7	5,000	--
Naphthalene	--	--	<0.12	--	--	--	**0.264**	--	--	--	20	500	4	10,000	--
Nitrobenzene	--	--	<0.29	--	--	--	<0.29	--	--	--	NE	NE	500	NE	--
N-Nitroso-di-n-propylamine	--	--	<0.29	--	--	--	<0.29	--	--	--	NE	NE	50	NE	--
N-Nitrosodiphenylamine	--	--	<0.29	--	--	--	<0.29	--	--	--	NE	NE	100	NE	--
Phenanthrene	--	--	**0.409**	--	--	--	**5.65**	--	--	--	500	500	10	10,000	--
Pyrene	--	--	**0.528**	--	--	--	**6.29**	--	--	--	1000	1000	1000	10,000	--
1,2,4-Trichlorobenzene	--	--	<0.29	--	--	--	<0.29	--	--	--	6	700	2	10,000	--
TOTAL PETROLEUM HYDROCARBONS - GASOLINE RANGE ORGANICS 6015 (mg/kg)															
TPH-GRO (VOA)	--	--	<6.6	--	--	--	<7.1	--	--	--	NE	NE	NE	NE	--
PESTICIDES 6081B (mg/kg)															
Aldrin	--	--	<0.0059	--	--	--	<0.0056	--	--	--	0.08	0.08	0.08	30	--
alpha-BHC	--	--	<0.0059	--	--	--	<0.0056	--	--	--	NE	NE	50	NE	--
beta-BHC	--	--	<0.0059	--	--	--	<0.0056	--	--	--	NE	NE	10	NE	--
delta-BHC	--	--	<0.0059	--	--	--	<0.0056	--	--	--	NE	NE	10	NE	--
gamma-BHC (Lindane)	--	--	<0.0030	--	--	--	<0.0030	--	--	--	1	0.5	0.003	600	--
Chlordane	--	--	<0.059	--	--	--	<0.056	--	--	--	5	5	5	600	--
Dieldrin	--	--	<0.0059	--	--	--	<0.0056	--	--	--	0.08	0.08	0.08	30	--
4,4'-DDD	--	--	<0.0059	--	--	--	<0.0056	--	--	--	8	8	8	600	--
4,4'-DDE	--	--	<0.0059	--	--	--	<0.0056	--	--	--	6	6	6	600	--
4,4'-DDT	--	--	<0.0059	--	--	--	**0.0082**	--	--	--	6	6	6	600	--
Endrin	--	--	<0.0059	--	--	--	<0.0056	--	--	--	10	10	10	200	--
Endosulfan sulfate	--	--	<0.0059	--	--	--	<0.0056	--	--	--	NE	NE	NE	NE	--
Endosulfan-I	--	--	<0.0059	--	--	--	<0.0056	--	--	--	300	1	0.5	5,000	--
Endosulfan-II	--	--	<0.0059	--	--	--	<0.0056	--	--	--	300	1	0.5	5,000	--
Heptachlor	--	--	<0.0059	--	--	--	<0.0056	--	--	--	0.3	0.3	0.3	100	--
Heptachlor epoxide	--	--	<0.0059	--	--	--	<0.0056	--	--	--	0.1	0.1	0.1	10	--
Hexachlorobenzene	--	--	<0.0059	--	--	--	<0.0056	--	--	--	0.7	0.7	0.7	8	--
Methoxychlor	--	--	<0.0059	--	--	--	<0.0056	--	--	--	200	200	200	4,000	--
Endrin ketone	--	--	<0.0059	--	--	--	<0.0056	--	--	--	NE	NE	NE	NE	--
POLYCHLORINATED BIPHENYLS 8082A (mg/kg)															
Aroclor 1016	--	--	<0.030	--	--	--	<0.028	--	--	--	1	1	1	100	--
Aroclor 1221	--	--	<0.030	--	--	--	<0.028	--	--	--	1	1	1	100	--
Aroclor 1232	--	--	<0.030	--	--	--	<0.028	--	--	--	1	1	1	100	--
Aroclor 1242	--	--	<0.030	--	--	--	<0.028	--	--	--	1	1	1	100	--
Aroclor 1248	--	--	<0.030	--	--	--	<0.028	--	--	--	1	1	1	100	--
Aroclor 1254	--	--	<0.030	--	--	--	<0.028	--	--	--	1	1	1	100	--
Aroclor 1260	--	--	<0.030	--	--	--	<0.028	--	--	--	1	1	1	100	--
Aroclor 1262	--	--	<0.030	--	--	--	<0.028	--	--	--	1	1	1	100	--
Aroclor 1268	--	--	<0.030	--	--	--	<0.028	--	--	--	1	1	1	100	--
HERBICIDES 8151 (mg/kg)															
2,4-D	-	-	<0.019	-	-	-	<0.019	-	-	-	NE	NE	NE	NE	--
2,4,5-TP (Silvex)	-	-	<0.0038	-	-	-	<0.0039	-	-	-	NE	NE	NE	NE	--
2,4,5-T	-	-	<0.0038	-	-	-	<0.0039	-	-	-	NE	NE	NE	NE	--
TOTAL PETROLEUM HYDROCARBONS - DIESEL RANGE ORGANICS 6015 (mg/kg)															
TPH-DRO (Semi-VOA)	-	-	**59**	-	-	-	**183**	-	-	-	NE	NE	NE	NE	--
TOTAL METALS (mg/kg)															
Antimony	--	--	--	--	--	--	--	--	--	--	20	20	20	300	--
Arsenic	-	-	**10.7**	-	-	-	**6.1**	-	-	-	20	20	20	500	--
Barium	-	-	**131**	-	-	-	**36.9**	-	-	-	1,000	1,000	1000	10,000	--
Beryllium	-	-	-	-	-	-	-	-	-	-	90	90	90	2,000	--
Cadmium	-	-	<0.61	-	-	-	<0.58	-	-	-	70	70	70	1,000	--
Chromium	-	-	**25.9**	-	-	-	**14.6**	-	-	-	100	100	100	2,000	--
Lead	**3.2**	**9.7**	**516**	**1270**	**1190**	**70**	**53.6**	**31.4**	**44.1**	**25.8**	200	200	200	6,000	--
Mercury	-	-	**0.4**	-	-	-	**0.11**	-	-	-	20	20	20	300	--
Nickel	-	-	-	-	-	-	-	-	-	-	600	600	20	10,000	--
Selenium	-	-	<2.5	-	-	-	<2.3	-	-	-	400	400	400	7,000	--
Silver	-	-	<0.61	-	-	-	<0.58	-	-	-	100	100	100	2,000	--
Thallium	-	-	-	-	-	-	-	-	-	-	8	8	8	800	--
Vanadium	-	-	-	-	-	-	-	-	-	-	400	400	400	7,000	--
Zinc	-	-	-	-	-	-	-	-	-	-	1,000	1,000	1000	10,000	--
TCLP Metals															
Lead	--	--	0.51	<0.50	1.1	--	--	--	--	--	--	--	--	--	5
General Chemistry															
Cyanide Reactivity	--	--	<11	--	--	--	<11	--	--	--	--	--	--	--	--
Ignitability (Flashpoint)	--	--	>200	--	--	--	>200	--	--	--	--	--	--	--	--
Solids, Percent	89.2	75.8	61.5	61.6	62.6	60.7	85.9	87.9	87.8	84.9	--	--	--	--	--
Specific Conductivity	--	--	113	--	--	--	157	--	--	--	--	--	--	--	--
Sulfide Reactivity	--	--	<110	--	--	--	<110	--	--	--	--	--	--	--	--
pH	--	--	6.22	--	--	--	6.89	--	--	--	--	--	--	--	--

NOTES:

-- is analysis not performed.	mg/kg is milligrams per kilogram	SVOC is semi-volatile organic compound
NE is not established.	mg/L is milligrams per liter	<2.0 indicates not detected at or above the laboratory reporting limit of 2.0 mg/kg
ND is not detected.	PID is photoionization detector	Analytes detected above the method reporting limit are in **Bold**
su is standard units.	ppmv is parts per million by volume	Analytes detected above MCP Reportable Concentrations are in **Red**
°F is degrees Farenheit	µmhos/cm is micromhos per centimeter	

TABLE 5
SUMMARY OF SOIL ANALYTICAL DATA - ALL OTHER ANALYSES

Maggiore Somerville
343-351 Summer Street
Somerville, Massachusetts

Sample Date	March 28, 2017								MCP Method 1 Soil Standards (mg/kg)		MCP Reportable Concentrations (mg/kg)	MCP Method 3 Upper Concentration Limits (mg/kg)	TCLP Regulatory Level (mg/kg)
Sample ID	PC-18 0-5' COMP	PC-18A 0-5'	PC-18B 0-5'	PC-18C 0-5'	PC-19 0-5' COMP	PC-19A 0-5'	PC-19B 0-5'	PC-19C 0-5'	S-1				
Depth (feet)	0-5	0-5	0-5	0-5	0-5	0-5	0-5	0-5					
PID (ppmv)	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	GW-2	GW-3	RCS-1		
SEMI-VOLATILE ORGANIC COMPOUNDS 8270D (mg/kg)													
Benzoic acid	<0.55	--	--	--	<0.55	--	--	--	NE	NE	1000	NE	--
2-Chlorophenol	<0.27	--	--	--	<0.28	--	--	--	100	100	0.7	3,000	--
4-Chloro-3-methyl phenol	<0.55	--	--	--	<0.55	--	--	--	NE	NE	1000	NE	--
2,4-Dichlorophenol	<0.55	--	--	--	<0.55	--	--	--	60	40	0.7	8,000	--
2,4-Dimethylphenol	<0.55	--	--	--	<0.55	--	--	--	100	500	0.7	10,000	--
2,4-Dinitrophenol	<0.55	--	--	--	<0.55	--	--	--	50	50	3	8,000	--
2-Methylphenol	<0.55	--	--	--	<0.55	--	--	--	NE	NE	500	NE	--
3&4-Methylphenol	<0.55	--	--	--	<0.55	--	--	--	NE	NE	500	NE	-
2-Nitrophenol	<0.55	--	--	--	<0.55	--	--	--	NE	NE	100	NE	--
4-Nitrophenol	<0.55	--	--	--	<0.55	--	--	--	NE	NE	100	NE	--
Pentachlorophenol	<0.55	--	--	--	<0.55	--	--	--	3	3	3	700	--
Phenol	<0.27	--	--	--	<0.28	--	--	--	50	20	1	10,000	--
2,4,5-Trichlorophenol	<0.55	--	--	--	<0.55	--	--	--	1000	600	4	10,000	--
2,4,6-Trichlorophenol	<0.55	--	--	--	<0.55	--	--	--	20	20	0.7	4,000	--
Acenaphthene	**1.31**	--	--	--	**1.23**	--	--	--	1000	1000	4	10,000	--
Acenaphthylene	**0.577**	--	--	--	**0.758**	--	--	--	600	10	1	10,000	--
Acetophenone	<0.55	--	--	--	<0.55	--	--	--	NE	NE	1000	NE	--
Aniline	<0.55	--	--	--	<0.55	--	--	--	NE	NE	1000	NE	--
Anthracene	**4.08**	--	--	--	**3.72**	--	--	--	1000	1000	1000	10,000	--
Benzo(a)anthracene	**7.62**	--	--	--	**9.24**	--	--	--	7	7	7	3,000	--
Benzo(a)pyrene	**7.01**	--	--	--	**8.73**	--	--	--	2	2	2	300	--
Benzo(b)fluoranthene	**6.39**	--	--	--	**8.48**	--	--	--	7	7	7	3,000	--
Benzo(g,h,i)perylene	**3.25**	--	--	--	**4.18**	--	--	--	1000	1000	1000	10,000	--
Benzo(k)fluoranthene	**4.81**	--	--	--	**5.11**	--	--	--	70	70	70	10,000	--
4-Bromophenyl phenyl ether	<0.27	--	--	--	<0.28	--	--	--	NE	NE	100	NE	--
Butyl benzyl phthalate	<0.27	--	--	--	<0.28	--	--	--	NE	NE	100	NE	--
2-Chloronaphthalene	<0.27	--	--	--	<0.28	--	--	--	NE	NE	1000	NE	--
4-Chloroaniline	<0.55	--	--	--	<0.55	--	--	--	NE	NE	1	400	--
Chrysene	**8.88**	--	--	--	**8.49**	--	--	--	70	70	70	10,000	--
bis(2-Chloroethoxy)methane	<0.27	--	--	--	<0.28	--	--	--	NE	NE	500	NE	--
bis(2-Chloroethyl)ether	<0.27	--	--	--	<0.28	--	--	--	0.7	2	0.7	800	--
bis(2-Chloroisopropyl)ether	<0.27	--	--	--	<0.28	--	--	--	0.7	30	0.7	10,000	--
1,2-Dichlorobenzene	<0.27	--	--	--	<0.28	--	--	--	100	30	9	10,000	--
1,2-Diphenylhydrazine	<0.27	--	--	--	<0.28	--	--	--	NE	NE	50	NE	--
1,3-Dichlorobenzene	<0.27	--	--	--	<0.28	--	--	--	100	100	3	5,000	--
1,4-Dichlorobenzene	<0.27	--	--	--	<0.28	--	--	--	1	80	0.7	10,000	--
2,4-Dinitrotoluene	<0.55	--	--	--	<0.55	--	--	--	2	2	0.7	800	--
2,6-Dinitrotoluene	<0.55	--	--	--	<0.55	--	--	--	NE	NE	100	NE	--
3,3'-Dichlorobenzidine	<0.55	--	--	--	<0.55	--	--	--	3	3	3	1,000	--
Dibenzo(a,h)anthracene	**1.25**	--	--	--	**1.53**	--	--	--	0.7	0.7	0.7	300	--
Dibenzofuran	**0.959**	--	--	--	**0.674**	--	--	--	NE	NE	100	NE	--
Di-n-butyl phthalate	<0.27	--	--	--	<0.28	--	--	--	NE	NE	50	NE	--
Di-n-octyl phthalate	<0.27	--	--	--	<0.28	--	--	--	NE	NE	1000	NE	--
Diethyl phthalate	<0.27	--	--	--	<0.28	--	--	--	200	300	10	10,000	--
Dimethyl phthalate	<0.27	--	--	--	<0.28	--	--	--	50	600	0.7	10,000	--
bis(2-Ethylhexyl)phthalate	<0.27	--	--	--	<0.28	--	--	--	90	90	90	10,000	--
Fluoranthene	**19.1**	--	--	--	**20.6**	--	--	--	1000	1000	1000	10,000	--
Fluorene	**1.51**	--	--	--	**1.28**	--	--	--	1000	1000	1000	10,000	--
Hexachlorobenzene	<0.27	--	--	--	<0.28	--	--	--	0.7	0.7	0.7	8	--
Hexachlorobutadiene	<0.27	--	--	--	<0.28	--	--	--	30	30	30	1,000	--
Hexachlorocyclopentadiene	<0.55	--	--	--	<0.55	--	--	--	NE	NE	50	NE	--
Hexachloroethane	<0.27	--	--	--	<0.28	--	--	--	3	50	0.7	2,000	--
Indeno(1,2,3-cd)pyrene	**3.74**	--	--	--	**4.71**	--	--	--	7	7	7	3,000	--
Isophorone	<0.27	--	--	--	<0.28	--	--	--	NE	NE	100	NE	--
2-Methylnaphthalene	**0.384**	--	--	--	**0.28**	--	--	--	80	300	0.7	5,000	--
Naphthalene	**0.802**	--	--	--	**0.491**	--	--	--	20	500	4	10,000	--
Nitrobenzene	<0.27	--	--	--	<0.28	--	--	--	NE	NE	500	NE	--
N-Nitroso-di-n-propylamine	<0.27	--	--	--	<0.28	--	--	--	NE	NE	50	NE	--
N-Nitrosodiphenylamine	<0.27	--	--	--	<0.28	--	--	--	NE	NE	100	NE	--
Phenanthrene	**14.9**	--	--	--	**13.2**	--	--	--	500	500	10	10,000	--
Pyrene	**15.7**	--	--	--	**17.9**	--	--	--	1000	1000	1000	10,000	--
1,2,4-Trichlorobenzene	<0.27	--	--	--	<0.28	--	--	--	6	700	2	10,000	--
TOTAL PETROLEUM HYDROCARBONS - GASOLINE RANGE ORGANICS 8015 (mg/kg)													
TPH-GRO (VOA)	<6.0	--	--	--	<6.3	--	--	--	NE	NE	NE	NE	--
PESTICIDES 8081B (mg/kg)													
Aldrin	<0.0056	--	--	--	<0.0055	--	--	--	0.08	0.08	0.08	30	--
alpha-BHC	<0.0056	--	--	--	<0.0055	--	--	--	NE	NE	50	NE	--
beta-BHC	<0.0056	--	--	--	<0.0055	--	--	--	NE	NE	10	NE	--
delta-BHC	<0.0056	--	--	--	<0.0055	--	--	--	NE	NE	10	NE	--
gamma-BHC (Lindane)	<0.0030	--	--	--	<0.0030	--	--	--	1	0.5	0.003	600	--
Chlordane	<0.056	--	--	--	<0.055	--	--	--	5	5	5	600	--
Dieldrin	<0.0056	--	--	--	<0.0055	--	--	--	0.08	0.08	0.08	30	--
4,4'-DDD	<0.0056	--	--	--	<0.0055	--	--	--	8	8	8	600	--
4,4'-DDE	<0.0056	--	--	--	<0.0055	--	--	--	6	6	6	600	--
4,4'-DDT	**0.0163**	--	--	--	**0.0149**	--	--	--	6	6	6	600	--
Endrin	<0.0056	--	--	--	<0.0055	--	--	--	10	10	10	200	--
Endosulfan sulfate	<0.0056	--	--	--	<0.0055	--	--	--	NE	NE	NE	NE	--
Endosulfan-I	<0.0056	--	--	--	<0.0055	--	--	--	300	1	0.5	5,000	--
Endosulfan-II	<0.0056	--	--	--	<0.0055	--	--	--	300	1	0.5	5,000	--
Heptachlor	<0.0056	--	--	--	<0.0055	--	--	--	0.3	0.3	0.3	100	--
Heptachlor epoxide	<0.0056	--	--	--	<0.0055	--	--	--	0.1	0.1	0.1	10	--
Hexachlorobenzene	<0.0056	--	--	--	<0.0055	--	--	--	0.7	0.7	0.7	8	--
Methoxychlor	<0.0056	--	--	--	<0.0055	--	--	--	200	200	200	4,000	--
Endrin ketone	<0.0056	--	--	--	<0.0055	--	--	--	NE	NE	NE	NE	--
POLYCHLORINATED BIPHENYLS 8082A (mg/kg)													
Aroclor 1016	<0.028	--	--	--	<0.027	--	--	--	1	1	1	100	--
Aroclor 1221	<0.028	--	--	--	<0.027	--	--	--	1	1	1	100	--
Aroclor 1232	<0.028	--	--	--	<0.027	--	--	--	1	1	1	100	--
Aroclor 1242	<0.028	--	--	--	<0.027	--	--	--	1	1	1	100	--
Aroclor 1248	<0.028	--	--	--	<0.027	--	--	--	1	1	1	100	--
Aroclor 1254	<0.028	--	--	--	**0.0319**	--	--	--	1	1	1	100	--
Aroclor 1260	<0.028	--	--	--	<0.027	--	--	--	1	1	1	100	--
Aroclor 1262	<0.028	--	--	--	<0.027	--	--	--	1	1	1	100	--
Aroclor 1268	<0.028	--	--	--	<0.027	--	--	--	1	1	1	100	--
HERBICIDES 8151 (mg/kg)													
2,4-D	<0.018	-	-	-	<0.018	-	-		NE	NE	NE	NE	
2,4,5-TP (Silvex)	<0.0036	-	-	-	<0.0037	-	-	-	NE	NE	NE	NE	-
2,4,5-T	<0.0036	-	-	-	<0.0037	-	-	-	NE	NE	NE	NE	--
TOTAL PETROLEUM HYDROCARBONS - DIESEL RANGE ORGANICS 8015 (mg/kg)													
TPH-DRO (Semi-VOA)	**311**	-	-	-	**345**	-	-		NE	NE	NE	NE	-
TOTAL METALS (mg/kg)													
Antimony	--	--	--	--	--	-			20	20	20	300	--
Arsenic	**7**	-	-	-	**5.4**	-	-	-	20	20	20	500	-
Barium	**103**	-	-	-	**31.9**	-	-	-	1,000	1,000	1000	10,000	--
Beryllium	-							-	90	90	90	2,000	-
Cadmium	<0.57	-	-	-	<0.55			-	70	70	70	1,000	-
Chromium	**11.3**	-			**11.9**	-	-	-	100	100	100	2,000	-
Lead	**98.2**	**82.9**	**293**	**84.6**	**151**	**85.4**	**471**	**320**	200	200	200	6,000	-
Mercury	**0.038**	-	-	-	**0.13**	-	-	-	20	20	20	300	-
Nickel	-	-	-	-	-	-	-	-	600	600	20	10,000	-
Selenium	<2.3	-	-		<2.2	-	-		400	400	400	7,000	--
Silver	<0.57	-	-	-	<0.55	-	-		100	100	100	2,000	--
Thallium	-	-	-			-	-	-	8	8	8	800	-
Vanadium	-	-	-		-	-	-	-	400	400	400	7,000	-
Zinc		-	-	-	-	-	-	-	1,000	1,000	1000	10,000	--
TCLP Metals													
Lead	--	--	<0.50	--	<0.50	--	<0.50	<0.50	--	--	--	--	5
General Chemistry													
Cyanide Reactivity	<11	--	--	--	<11	--	--	--	--	--		--	--
Ignitability (Flashpoint)	>200	--	--	--	>200	--	--	--	--	--	--	--	--
Solids, Percent	**88**	**88.3**	**85.7**	**84**	**87.2**	**88**	**81.7**	**82.8**	--	--	--	--	--
Specific Conductivity	**328**	--	--	--	**188**	--	--	--	--	--		--	--
Sulfide Reactivity	<110	--	--	--	<110	--	--	--	--	--	--	--	--
pH	**7.77**	--	--	--	**7.98**	--	--	--	--	--	--	--	--

NOTES:

-- is analysis not performed.	mg/kg is milligrams per kilogram.	SVOC is semi-volatile organic compound
NE is not established.	mg/L is milligrams per liter	<2.0 indicates not detected at or above the laboratory reporting limit of 2.0 mg/kg.
ND is not detected	PID is photoionization detector	Analytes detected above the method reporting limit are in **Bold**
su is standard units.	ppmv is parts per million by volume	Analytes detected above MCP Reportable Concentrations are in Red
°F is degrees Farenheit	µmhos/cm is micromhos per centimeter	

TABLE 6
SUMMARY OF SOIL ANALYTICAL DATA (BUILDING FOOTPRINT) - VOCs

Maggiore Somerville
343-351 Summer Street
Somerville, Massachusetts

Sample Date	August 8, 2016					March 28, 2017							MCP Method 1 Soil Standards (mg/kg)		MCP Reportable Concentrations (mg/kg)	MCP Method 3 Upper Concentration Limits (mg/kg)
Sample ID	B-101	B-102	MW-105	MW-106	MW-107	PC-1 0-15' COMP	PC-1 0-5'	PC-1 10-15'	PC-1 5-10'	PC-2 0-15' COMP	PC-2 0-5'	PC-2 10-15'	S-1		RCS-1	
Depth (feet)	0-10	0-10	13.5	9	13	0-15	0-5	10-15	5-10	0-15	0-5	10-15				
PID (ppmv)	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	GW-2	GW-3		
VOLATILE ORGANIC COMPOUNDS (mg/kg)																
Acetone	**0.02**	<0.012	--	--	--	**0.0542**	--	--	--	**0.0284**	--	--	50	400	6	10,000
Benzene	<0.00050	**0.001**	--	--	--	<0.00056	--	--	--	<0.00058	--	--	40	40	2	10,000
Bromobenzene	<0.0050	<0.0061	--	--	--	<0.0056	--	--	--	<0.0058	--	--	NE	NE	100	NE
Bromochloromethane	<0.0050	<0.0061	--	--	--	<0.0056	--	--	--	<0.0058	--	--	NE	NE	NE	NE
Bromodichloromethane	<0.0020	<0.0024	--	--	--	<0.0022	--	--	--	<0.0023	--	--	0.1	30	0.1	5,000
Bromoform	<0.0020	<0.0024	--	--	--	<0.0022	--	--	--	<0.0023	--	--	1	300	0.1	10,000
Bromomethane	<0.0020	<0.0024	--	--	--	<0.011	--	--	--	<0.012	--	--	0.5	30	0.5	6,000
2-Butanone (MEK)	<0.010	<0.012	--	--	--	<0.011	--	--	--	<0.012	--	--	50	400	4	10,000
n-Butylbenzene	<0.0050	<0.0061	--	--	--	<0.0056	--	--	--	<0.0058	--	--	NE	NE	NE	NE
sec-Butylbenzene	<0.0050	<0.0061	--	--	--	<0.0056	--	--	--	<0.0058	--	--	NE	NE	NE	NE
tert-Butylbenzene	<0.0050	<0.0061	--	--	--	<0.0056	--	--	--	<0.0058	--	--	NE	NE	100	NE
Carbon disulfide	<0.0050	<0.0061	--	--	--	<0.0056	--	--	--	<0.0058	--	--	NE	NE	100	NE
Carbon tetrachloride	<0.0020	<0.0024	--	--	--	<0.0022	--	--	--	<0.0023	--	--	5	30	5	10,000
Chlorobenzene	<0.0020	<0.0024	--	--	--	<0.0022	--	--	--	<0.0023	--	--	3	100	1	10,000
Chloroethane	<0.0050	<0.0061	--	--	--	<0.011	--	--	--	<0.012	--	--	NE	NE	100	NE
Chloroform	<0.0020	<0.0024	--	--	--	<0.0022	--	--	--	<0.0023	--	--	0.2	500	0.2	10,000
Chloromethane	<0.0050	<0.0061	--	--	--	<0.0056	--	--	--	<0.0058	--	--	NE	NE	100	NE
o-Chlorotoluene	<0.0050	<0.0061	--	--	--	<0.0056	--	--	--	<0.0058	--	--	NE	NE	100	NE
p-Chlorotoluene	<0.0050	<0.0061	--	--	--	<0.0056	--	--	--	<0.0058	--	--	NE	NE	NE	NE
Di-Isopropyl ether	<0.0020	<0.0024	--	--	--	<0.0022	--	--	--	<0.0023	--	--	NE	NE	100	NE
1,2-Dibromo-3-chloropropane	<0.0050	<0.0061	--	--	--	<0.0056	--	--	--	<0.0058	--	--	NE	NE	10	NE
Dibromochloromethane	<0.0020	<0.0024	--	--	--	<0.0056	--	--	--	<0.0058	--	--	0.03	20	0.005	5,000
1,2-Dibromoethane	<0.0020	<0.0024	--	--	--	<0.0022	--	--	--	<0.0023	--	--	0.1	1	0.1	400
1,2-Dichlorobenzene	<0.0020	<0.0024	--	--	--	<0.0022	--	--	--	<0.0023	--	--	100	300	9	10,000
1,3-Dichlorobenzene	<0.0020	<0.0024	--	--	--	<0.0022	--	--	--	<0.0023	--	--	100	100	3	5,000
1,4-Dichlorobenzene	<0.0020	<0.0024	--	--	--	<0.0022	--	--	--	<0.0023	--	--	1	80	0.7	10,000
Dichlorodifluoromethane	<0.0020	<0.0024	--	--	--	<0.0056	--	--	--	<0.0058	--	--	NE	NE	1000	NE
1,1-Dichloroethane	<0.0020	<0.0024	--	--	--	<0.0022	--	--	--	<0.0023	--	--	9	500	0.4	10,000
1,2-Dichloroethane	<0.0020	<0.0024	--	--	--	<0.0022	--	--	--	<0.0023	--	--	0.1	20	0.1	9,000
1,1-Dichloroethene	<0.0020	<0.0024	--	--	--	<0.0022	--	--	--	<0.0023	--	--	40	500	3	10,000
cis-1,2-Dichloroethene	<0.0020	<0.0024	--	--	--	<0.0022	--	--	--	<0.0023	--	--	0.1	100	0.1	5,000
trans-1,2-Dichloroethene	<0.0020	<0.0024	--	--	--	<0.0022	--	--	--	<0.0023	--	--	1	500	1	10,000
1,2-Dichloropropane	<0.0020	<0.0024	--	--	--	<0.0022	--	--	--	<0.0023	--	--	0.1	30	0.1	10,000
1,3-Dichloropropane	<0.0050	<0.0061	--	--	--	<0.0056	--	--	--	<0.0058	--	--	NE	NE	500	NE
2,2-Dichloropropane	<0.0050	<0.0061	--	--	--	<0.0056	--	--	--	<0.0058	--	--	NE	NE	NE	NE
1,1-Dichloropropene	<0.0050	<0.0061	--	--	--	<0.0056	--	--	--	<0.0058	--	--	NE	NE	NE	NE
cis-1,3-Dichloropropene	<0.0020	<0.0024	--	--	--	<0.0022	--	--	--	<0.0023	--	--	NE	NE	0.01	NE
trans-1,3-Dichloropropene	<0.0020	<0.0024	--	--	--	<0.0022	--	--	--	<0.0023	--	--	NE	NE	0.01	NE
1,4-Dioxane	<0.13	<0.15	--	--	--	<0.14	--	--	--	<0.14	--	--	6	20	0.2	5,000
Ethyl Ether	<0.0050	<0.0061	--	--	--	<0.0056	--	--	--	<0.0058	--	--	NE	NE	100	NE
Ethylbenzene	<0.0020	<0.0024	--	--	--	<0.0022	--	--	--	<0.0023	--	--	500	500	40	10,000
Hexachlorobutadiene	<0.0050	<0.0061	--	--	--	<0.0056	--	--	--	<0.0058	--	--	30	30	30	1,000
2-Hexanone	<0.010	<0.012	--	--	--	<0.0056	--	--	--	<0.0058	--	--	NE	NE	100	NE
Isopropylbenzene	<0.0050	<0.0061	--	--	--	<0.0056	--	--	--	<0.0058	--	--	NE	NE	1000	NE
p-Isopropyltoluene	<0.0050	<0.0061	--	--	--	<0.0056	--	--	--	<0.0058	--	--	NE	NE	100	NE
Methyl Tert Butyl Ether	<0.0020	<0.0024	--	--	--	<0.0022	--	--	--	<0.0023	--	--	100	100	0.1	5,000
4-Methyl-2-pentanone (MIBK)	<0.0050	<0.0061	--	--	--	<0.0056	--	--	--	<0.0058	--	--	50	400	0.4	10,000
Methylene bromide	<0.0050	<0.0061	--	--	--	<0.0056	--	--	--	<0.0058	--	--	NE	NE	500	NE
Methylene chloride	<0.0020	<0.0024	--	--	--	<0.0022	--	--	--	<0.0023	--	--	4	400	0.1	7,000
Naphthalene	<0.0050	<0.0061	--	--	--	0.0162	--	--	--	<0.0058	--	--	20	500	4	10,000
n-Propylbenzene	<0.0050	<0.0061	--	--	--	<0.0056	--	--	--	<0.0058	--	--	NE	NE	100	NE
Styrene	<0.0050	<0.0061	--	--	--	<0.0056	--	--	--	<0.0058	--	--	4	70	3	10,000
tert-Amyl Methyl Ether	<0.0050	<0.0061	--	--	--	<0.0056	--	--	--	<0.0058	--	--	NE	NE	NE	NE
tert-Butyl Ethyl Ether	<0.0020	<0.0024	--	--	--	<0.0022	--	--	--	<0.0023	--	--	NE	NE	NE	NE
1,1,1,2-Tetrachloroethane	<0.0050	<0.0061	--	--	--	<0.0022	--	--	--	<0.0023	--	--	0.1	80	0.1	5,000
1,1,2,2-Tetrachloroethane	<0.0020	<0.0024	--	--	--	<0.0056	--	--	--	<0.0058	--	--	0.02	10	0.005	4,000
Tetrachloroethene	<0.0020	<0.0024	--	--	--	<0.0022	--	--	--	<0.0023	--	--	10	30	1	10,000
Tetrahydrofuran	<0.010	<0.012	--	--	--	<0.011	--	--	--	<0.012	--	--	NE	NE	500	NE
Toluene	<0.0050	<0.0061	--	--	--	<0.0056	--	--	--	<0.0058	--	--	500	500	30	10,000
1,2,3-Trichlorobenzene	<0.0050	<0.0061	--	--	--	<0.0056	--	--	--	<0.0058	--	--	NE	NE	NE	NE
1,2,4-Trichlorobenzene	<0.0050	<0.0061	--	--	--	<0.0056	--	--	--	<0.0058	--	--	6	700	2	10,000
1,1,1-Trichloroethane	<0.0020	<0.0024	--	--	--	<0.0022	--	--	--	<0.0023	--	--	500	500	30	10,000
1,1,2-Trichloroethane	<0.0020	<0.0024	--	--	--	<0.0022	--	--	--	<0.0023	--	--	2	40	0.1	5,000
Trichloroethene	<0.0020	<0.0024	--	--	--	<0.0022	--	--	--	<0.0023	--	--	0.3	30	0.3	600
Trichlorofluoromethane	<0.0020	<0.0024	--	--	--	<0.0022	--	--	--	<0.0023	--	--	NE	NE	1000	NE
1,2,3-Trichloropropane	<0.0050	<0.0061	--	--	--	<0.0056	--	--	--	<0.0058	--	--	NE	NE	100	NE
1,2,4-Trimethylbenzene	<0.0050	<0.0061	--	--	--	<0.0056	--	--	--	<0.0058	--	--	NE	NE	1000	NE
1,3,5-Trimethylbenzene	<0.0050	<0.0061	--	--	--	<0.0056	--	--	--	<0.0058	--	--	NE	NE	10	NE
Vinyl chloride	<0.0020	<0.0024	--	--	--	<0.011	--	--	--	<0.012	--	--	0.7	1	0.7	600
m,p-Xylene	<0.0020	<0.0024	--	--	--	<0.0022	--	--	--	<0.0023	--	--	100	500	100	10,000
o-Xylene	<0.0020	<0.0024	--	--	--	<0.0022	--	--	--	<0.0023	--	--	100	500	100	10,000
Xylene (total)	<0.0020	<0.0024	--	--	--	<0.0022	--	--	--	<0.0023	--	--	100	500	100	10,000

NOTES:

-- is analysis not performed	mg/kg is milligrams per kilogram.
NE is not established	mg/L is milligrams per liter
ND is not detected	PID is photoionization detector
	ppmv is parts per million by volume

TABLE 6
SUMMARY OF SOIL ANALYTICAL DATA (BUILDING FOOTPRINT) - VOCs

Maggiore Somerville
343-351 Summer Street
Somerville Massachusetts

Sample Date	March 28, 2017																						**MCP Method 1 Soil Standards (mg/kg)**		**MCP Reportable Concentrations**	**MCP Method 3 Upper Concentration Limits (mg/kg)**
Sample ID	PC-2 5-10'	PC-3 0-15'	PC-3 0-5'	PC-3 10-15'	PC-3 5-10'	PC-4 0-15'	PC-4 0-5'	PC-4 10-15'	PC-4 5-10'	PC-5 0-15'	PC-5 0-5'	PC-5 10-15'	PC-5 5-10'	PC-6 0-15'	PC-6 0-5'	PC-6 10-15'	PC-6 5-10'	PC-7 0-15'	PC-7 0-5'	PC-7 10-15'	PC-7 5-10'	PC-8 0-15'	S-1		RCS-1	
Depth (feet)	5-10	0-15	0-5	10-15	5-10	0-15	0-5	10-15	5-10	0-15	0-5	10-15	5-10	0-15	0-5	10-15	5-10	0-15	0-5	10-15	5-10	0-15	GW-2	GW-3		
PID (ppmv)	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL				
VOLATILE ORGANIC COMPOUNDS (mg/kg)																										
Acetone	--	**0.0407**	--	--	--	**0.08**	--	--	--	**0.0375**	--	--	--	<0.011	--	--	--	**0.0242**	--	--	--	**0.0235**	50	400	6	10,000
Benzene	--	<0.00052	--	--	--	<0.00067	--	--	--	<0.00058	--	--	--	<0.00054	--	--	--	<0.00056	--	--	--	<0.00052	40	40	2	10,000
Bromobenzene	--	<0.0052	--	--	--	<0.0067	--	--	--	<0.0058	--	--	--	<0.0054	--	--	--	<0.0056	--	--	--	<0.0052	NE	NE	100	NE
Bromochloromethane	--	<0.0052	--	--	--	<0.0067	--	--	--	<0.0058	--	--	--	<0.0054	--	--	--	<0.0056	--	--	--	<0.0052	NE	NE	NE	NE
Bromodichloromethane	--	<0.0021	--	--	--	<0.0027	--	--	--	<0.0023	--	--	--	<0.0022	--	--	--	<0.0022	--	--	--	<0.0021	0.1	30	0.1	5,000
Bromoform	--	<0.0021	--	--	--	<0.0027	--	--	--	<0.0023	--	--	--	<0.0022	--	--	--	<0.0022	--	--	--	<0.0021	1	300	0.1	10,000
Bromomethane	--	<0.010	--	--	--	<0.13	--	--	--	<0.012	--	--	--	<0.011	--	--	--	<0.011	--	--	--	<0.010	0.5	30	0.5	6,000
2-Butanone (MEK)	--	<0.010	--	--	--	<0.13	--	--	--	<0.012	--	--	--	<0.011	--	--	--	<0.011	--	--	--	<0.010	50	400	4	10,000
n-Butylbenzene	--	<0.0052	--	--	--	<0.0067	--	--	--	<0.0058	--	--	--	<0.0054	--	--	--	<0.0056	--	--	--	<0.0052	NE	NE	NE	NE
sec-Butylbenzene	--	<0.0052	--	--	--	<0.0067	--	--	--	<0.0058	--	--	--	<0.0054	--	--	--	<0.0056	--	--	--	<0.0052	NE	NE	NE	NE
tert-Butylbenzene	--	<0.0052	--	--	--	<0.0067	--	--	--	<0.0058	--	--	--	<0.0054	--	--	--	<0.0056	--	--	--	<0.0052	NE	NE	100	NE
Carbon disulfide	--	<0.0052	--	--	--	<0.0067	--	--	--	<0.0058	--	--	--	<0.0054	--	--	--	<0.0056	--	--	--	<0.0052	NE	NE	100	NE
Carbon tetrachloride	--	<0.0021	--	--	--	<0.0027	--	--	--	<0.0023	--	--	--	<0.0022	--	--	--	<0.0022	--	--	--	<0.0021	5	30	5	10,000
Chlorobenzene	--	<0.0021	--	--	--	<0.0027	--	--	--	<0.0023	--	--	--	<0.0022	--	--	--	<0.0022	--	--	--	<0.0021	3	100	1	10,000
Chloroethane	--	<0.010	--	--	--	<0.13	--	--	--	<0.012	--	--	--	<0.011	--	--	--	<0.011	--	--	--	<0.010	NE	NE	100	NE
Chloroform	--	<0.0021	--	--	--	<0.0027	--	--	--	<0.0023	--	--	--	<0.0022	--	--	--	<0.0022	--	--	--	<0.0021	0.2	500	0.2	10,000
Chloromethane	--	<0.0052	--	--	--	<0.0067	--	--	--	<0.0058	--	--	--	<0.0054	--	--	--	<0.0056	--	--	--	<0.0052	NE	NE	100	NE
o-Chlorotoluene	--	<0.0052	--	--	--	<0.0067	--	--	--	<0.0058	--	--	--	<0.0054	--	--	--	<0.0056	--	--	--	<0.0052	NE	NE	100	NE
p-Chlorotoluene	--	<0.0052	--	--	--	<0.0067	--	--	--	<0.0058	--	--	--	<0.0054	--	--	--	<0.0056	--	--	--	<0.0052	NE	NE	NE	NE
Di-Isopropyl ether	--	<0.0021	--	--	--	<0.0027	--	--	--	<0.0023	--	--	--	<0.0022	--	--	--	<0.0022	--	--	--	<0.0021	NE	NE	100	NE
1,2-Dibromo-3-chloropropane	--	<0.0052	--	--	--	<0.0067	--	--	--	<0.0058	--	--	--	<0.0054	--	--	--	<0.0056	--	--	--	<0.0052	NE	NE	10	NE
Dibromochloromethane	--	<0.0052	--	--	--	<0.0067	--	--	--	<0.0058	--	--	--	<0.0054	--	--	--	<0.0056	--	--	--	<0.0052	0.03	20	0.005	5,000
1,2-Dibromoethane	--	<0.0021	--	--	--	<0.0027	--	--	--	<0.0023	--	--	--	<0.0022	--	--	--	<0.0022	--	--	--	<0.0021	0.1	1	0.1	400
1,2-Dichlorobenzene	--	<0.0021	--	--	--	<0.0027	--	--	--	<0.0023	--	--	--	<0.0022	--	--	--	<0.0022	--	--	--	<0.0021	100	300	9	10,000
1,3-Dichlorobenzene	--	<0.0021	--	--	--	<0.0027	--	--	--	<0.0023	--	--	--	<0.0022	--	--	--	<0.0022	--	--	--	<0.0021	100	100	3	5,000
1,4-Dichlorobenzene	--	<0.0021	--	--	--	<0.0027	--	--	--	<0.0023	--	--	--	<0.0022	--	--	--	<0.0022	--	--	--	<0.0021	1	80	0.7	10,000
Dichlorodifluoromethane	--	<0.0052	--	--	--	<0.0067	--	--	--	<0.0058	--	--	--	<0.0054	--	--	--	<0.0056	--	--	--	<0.0052	NE	NE	1000	NE
1,1-Dichloroethane	--	<0.0021	--	--	--	<0.0027	--	--	--	<0.0023	--	--	--	<0.0022	--	--	--	<0.0022	--	--	--	<0.0021	9	500	0.4	10,000
1,2-Dichloroethane	--	<0.0021	--	--	--	<0.0027	--	--	--	<0.0023	--	--	--	<0.0022	--	--	--	<0.0022	--	--	--	<0.0021	0.1	20	0.1	9,000
1,1-Dichloroethene	--	<0.0021	--	--	--	<0.0027	--	--	--	<0.0023	--	--	--	<0.0022	--	--	--	<0.0022	--	--	--	<0.0021	40	500 .	3	10,000
cis-1,2-Dichloroethene	--	<0.0021	--	--	--	<0.0027	--	--	--	<0.0023	--	--	--	<0.0022	--	--	--	<0.0022	--	--	--	<0.0021	0.1	100	0.1	5,000
trans-1,2-Dichloroethene	--	<0.0021	--	--	--	<0.0027	--	--	--	<0.0023	--	--	--	<0.0022	--	--	--	<0.0022	--	--	--	<0.0021	1	500	1	10,000
1,2-Dichloropropane	--	<0.0021	--	--	--	<0.0027	--	--	--	<0.0023	--	--	--	<0.0022	--	--	--	<0.0022	--	--	--	<0.0021	0.1	30	0.1	10,000
1,3-Dichloropropane	--	<0.0052	--	--	--	<0.0067	--	--	--	<0.0058	--	--	--	<0.0054	--	--	--	<0.0056	--	--	--	<0.0052	NE	NE	500	NE
2,2-Dichloropropane	--	<0.0052	--	--	--	<0.0067	--	--	--	<0.0058	--	--	--	<0.0054	--	--	--	<0.0056	--	--	--	<0.0052	NE	NE	NE	NE
1,1-Dichloropropene	--	<0.0052	--	--	--	<0.0067	--	--	--	<0.0058	--	--	--	<0.0054	--	--	--	<0.0056	--	--	--	<0.0052	NE	NE	NE	NE
cis-1,3-Dichloropropene	--	<0.0021	--	--	--	<0.0027	--	--	--	<0.0023	--	--	--	<0.0022	--	--	--	<0.0022	--	--	--	<0.0021	NE	NE	0.01	NE
trans-1,3-Dichloropropene	--	<0.0021	--	--	--	<0.0027	--	--	--	<0.0023	--	--	--	<0.0022	--	--	--	<0.0022	--	--	--	<0.0021	NE	NE	0.01	NE
1,4-Dioxane	--	<0.13	--	--	--	<0.17	--	--	--	<0.14	--	--	--	<0.13	--	--	--	<0.14	--	--	--	<0.13	6	20	0.2	5,000
Ethyl Ether	--	<0.0052	--	--	--	<0.0067	--	--	--	<0.0058	--	--	--	<0.0054	--	--	--	<0.0056	--	--	--	<0.0052	NE	NE	100	NE
Ethylbenzene	--	**0.0027**	--	--	--	<0.0027	--	--	--	**0.0031**	--	--	--	<0.0022	--	--	--	<0.0022	--	--	--	<0.0021	500	500	40	10,000
Hexachlorobutadiene	--	<0.0052	--	--	--	<0.0067	--	--	--	<0.0058	--	--	--	<0.0054	--	--	--	<0.0056	--	--	--	<0.0052	30	30	30	1,000
2-Hexanone	--	<0.0052	--	--	--	<0.0067	--	--	--	<0.0058	--	--	--	<0.0054	--	--	--	<0.0056	--	--	--	<0.0052	NE	NE	100	NE
Isopropylbenzene	--	<0.0052	--	--	--	<0.0067	--	--	--	<0.0058	--	--	--	<0.0054	--	--	--	<0.0056	--	--	--	<0.0052	NE	NE	1000	NE
p-Isopropyltoluene	--	<0.0052	--	--	--	<0.0067	--	--	--	<0.0058	--	--	--	<0.0054	--	--	--	<0.0056	--	--	--	<0.0052	NE	NE	100	NE
Methyl Tert Butyl Ether	--	<0.0021	--	--	--	<0.0027	--	--	--	<0.0023	--	--	--	<0.0022	--	--	--	<0.0022	--	--	--	<0.0021	100	100	0.1	5,000
4-Methyl-2-pentanone (MIBK)	--	<0.0052	--	--	--	<0.0067	--	--	--	<0.0058	--	--	--	<0.0054	--	--	--	<0.0056	--	--	--	<0.0052	50	400	0.4	10,000
Methylene bromide	--	<0.0052	--	--	--	<0.0067	--	--	--	<0.0058	--	--	--	<0.0054	--	--	--	<0.0056	--	--	--	<0.0052	NE	NE	500	NE
Methylene chloride	--	<0.0021	--	--	--	<0.0027	--	--	--	<0.0023	--	--	--	<0.0022	--	--	--	<0.0022	--	--	--	<0.0021	4	400	0.1	7,000
Naphthalene	--	<0.0052	--	--	--	<0.0067	--	--	--	<0.0058	--	--	--	**0.0339**	--	--	--	<0.0056	--	--	--	<0.0052	20	500	4	10,000
n-Propylbenzene	--	<0.0052	--	--	--	<0.0067	--	--	--	<0.0058	--	--	--	<0.0054	--	--	--	<0.0056	--	--	--	<0.0052	NE	NE	100	NE
Styrene	--	<0.0052	--	--	--	<0.0067	--	--	--	<0.0058	--	--	--	<0.0054	--	--	--	<0.0056	--	--	--	<0.0052	4	70	3	10,000
tert-Amyl Methyl Ether	--	<0.0052	--	--	--	<0.0067	--	--	--	<0.0058	--	--	--	<0.0054	--	--	--	<0.0056	--	--	--	<0.0052	NE	NE	NE	NE
tert-Butyl Ethyl Ether	--	<0.0021	--	--	--	<0.0027	--	--	--	<0.0023	--	--	--	<0.0022	--	--	--	<0.0022	--	--	--	<0.0021	NE	NE	NE	NE
1,1,1,2-Tetrachloroethane	--	<0.0021	--	--	--	<0.0027	--	--	--	<0.0023	--	--	--	<0.0022	--	--	--	<0.0022	--	--	--	<0.0021	0.1	80	0.1	5,000
1,1,2,2-Tetrachloroethane	--	<0.0052	--	--	--	<0.0067	--	--	--	<0.0058	--	--	--	<0.0054	--	--	--	<0.0056	--	--	--	<0.0052	0.02	10	0.005	4,000
Tetrachloroethene	--	<0.0021	--	--	--	<0.0027	--	--	--	<0.0023	--	--	--	<0.0022	--	--	--	<0.0022	--	--	--	<0.0021	10	30	1	10,000
Tetrahydrofuran	--	<0.010	--	--	--	<0.013	--	--	--	<0.012	--	--	--	<0.011	--	--	--	<0.011	--	--	--	<0.010	NE	NE	500	NE
Toluene	--	<0.0052	--	--	--	<0.0067	--	--	--	<0.0058	--	--	--	<0.0054	--	--	--	<0.0056	--	--	--	<0.0052	500	500	30	10,000
1,2,3-Trichlorobenzene	--	<0.0052	--	--	--	<0.0067	--	--	--	<0.0058	--	--	--	<0.0054	--	--	--	<0.0056	--	--	--	<0.0052	NE	NE	NE	NE
1,2,4-Trichlorobenzene	--	<0.0052	--	--	--	<0.0067	--	--	--	<0.0058	--	--	--	<0.0054	--	--	--	<0.0056	--	--	--	<0.0052	6	700	2	10,000
1,1,1-Trichloroethane	--	<0.0021	--	--	--	<0.0027	--	--	--	<0.0023	--	--	--	<0.0022	--	--	--	<0.0022	--	--	--	<0.0021	500	500	30	10,000
1,1,2-Trichloroethane	--	<0.0021	--	--	--	<0.0027	--	--	--	<0.0023	--	--	--	<0.0022	--	--	--	<0.0022	--	--	--	<0.0021	2	40	0.1	5,000
Trichloroethene	--	<0.0021	--	--	--	<0.0027	--	--	--	<0.0023	--	--	--	<0.0022	--	--	--	<0.0022	--	--	--	<0.0021	0.3	30	0.3	600
Trichlorofluoromethane	--	<0.0021	--	--	--	<0.0027	--	--	--	<0.0023	--	--	--	<0.0022	--	--	--	<0.0022	--	--	--	<0.0021	NE	NE	1000	NE
1,2,3-Trichloropropane	--	<0.0052	--	--	--	<0.0067	--	--	--	<0.0058	--	--	--	<0.0054	--	--	--	<0.0056	--	--	--	<0.0052	NE	NE	100	NE
1,2,4-Trimethylbenzene	--	<0.0052	--	--	--	<0.0067	--	--	--	<0.0058	--	--	--	<0.0054	--	--	--	<0.0056	--	--	--	<0.0052	NE	NE	1000	NE
1,3,5-Trimethylbenzene	--	<0.0052	--	--	--	<0.0067	--	--	--	<0.0058	--	--	--	<0.0054	--	--	--	<0.0056	--	--	--	<0.0052	NE	NE	10	NE
Vinyl chloride	--	<0.010	--	--	--	<0.013	--	--	--	<0.012	--	--	--	<0.011	--	--	--	<0.011	--	--	--	<0.010	0.7	1	0.7	600
m,p-Xylene	--	**0.0144**	--	--	--	<0.0027	--	--	--	**0.0159**	--	--	--	<0.0022	--	--	--	<0.0022	--	--	--	<0.0021	100	500	100	10,000
o-Xylene	--	**0.0067**	--	--	--	<0.0027	--	--	--	**0.0066**	--	--	--	<0.0022	--	--	--	<0.0022	--	--	--	<0.0021	100	500	100	10,000
Xylene (total)	--	**0.0211**	--	--	--	<0.0027	--	--	--	**0.0225**	--	--	--	<0.0022	--	--	--	<0.0022	--	--	--	<0.0021	100	500	100	10,000

NOTES:

-- is analysis not performed
NE is not established
ND is not detected

mg/kg is milligrams per kilogram.
mg/L is milligrams per liter
PID is photoionization detector
ppmv is parts per million by volume

VOC is volatile organic compound
<2.0 indicates not detected at or above the laboratory reporting limit of 2.0 mg/kg
Analytes detected above the method reporting limit are in **Bold**
Analytes detected above MCP Reportable Concentrations are in **Red**.

TABLE 6
SUMMARY OF SOIL ANALYTICAL DATA (BUILDING FOOTPRINT) - VOCs

Maggiore Somerville
343-351 Summer Street
Somerville, Massachusetts

																							MCP Method 1 Soil Standards (mg/kg)		MCP Reportable Concentrations	MCP Method 3 Upper Concentration Limits (mg/kg)
Sample Date												March 28, 2017											S-1		RCS-1	
Sample ID	PC-8 0-5'	PC-8 10-15'	PC-8 5-10'	PC-9 0-15'	PC-9 0-5'	PC-9 10-15'	PC-9 5-10'	PC-10 0-15'	PC-10 0-5'	PC-10 10-15'	PC-10 5-10'	PC-11 0-15'	PC-11 0-5'	PC-11 10-15'	PC-11 5-10'	PC-12 0-15'	PC-12 0-5'	PC-12 10-15'	PC-12 5-10'	PC-13 0-15	PC-13 0-5'	PC-13 10-15'	GW-2	GW-3		
Depth (feet)	0-5	10-15	5-10	0-15	0-5	10-15	5-10	0-15	0-5	10-15	5-10	0-15	0-5	10-15	5-10	0-15	0-5	10-15	5-10	0-15	0-5	10-15				
PID (ppmv)	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL				
VOLATILE ORGANIC COMPOUNDS (mg/kg)																										
Acetone	--	--	--	<0.0096	--	--	--	**0.044**	--	--	--	**0.0338**	--	--	--	**0.113**	--	--	--	<0.011	--	--	50	400	6	10,000
Benzene	--	--	--	<0.00048	--	--	--	<0.00053	--	--	--	<0.00060	--	--	--	<0.00057	--	--	--	<0.00057	--	--	40	40	2	10,000
Bromobenzene	--	--	--	<0.0048	--	--	--	<0.0053	--	--	--	<0.0060	--	--	--	<0.0057	--	--	--	<0.0057	--	--	NE	NE	100	NE
Bromochloromethane	--	--	--	<0.0048	--	--	--	<0.0053	--	--	--	<0.0060	--	--	--	<0.0057	--	--	--	<0.0057	--	--	NE	NE	NE	NE
Bromodichloromethane	--	--	--	<0.0019	--	--	--	<0.0021	--	--	--	<0.0024	--	--	--	<0.0023	--	--	--	<0.0023	--	--	0.1	30	0.1	5,000
Bromoform	--	--	--	<0.0019	--	--	--	<0.0021	--	--	--	<0.0024	--	--	--	<0.0023	--	--	--	<0.0023	--	--	1	300	0.1	10,000
Bromomethane	--	--	--	<0.0096	--	--	--	<0.011	--	--	--	<0.012	--	--	--	<0.011	--	--	--	<0.011	--	--	0.5	30	0.5	6,000
2-Butanone (MEK)	--	--	--	<0.0096	--	--	--	<0.011	--	--	--	<0.012	--	--	--	<0.011	--	--	--	<0.011	--	--	50	400	4	10,000
n-Butylbenzene	--	--	--	<0.0048	--	--	--	<0.0053	--	--	--	<0.0060	--	--	--	<0.0057	--	--	--	<0.0057	--	--	NE	NE	NE	NE
sec-Butylbenzene	--	--	--	<0.0048	--	--	--	<0.0053	--	--	--	<0.0060	--	--	--	<0.0057	--	--	--	<0.0057	--	--	NE	NE	NE	NE
tert-Butylbenzene	--	--	--	<0.0048	--	--	--	<0.0053	--	--	--	<0.0060	--	--	--	<0.0057	--	--	--	<0.0057	--	--	NE	NE	100	NE
Carbon disulfide	--	--	--	<0.0048	--	--	--	<0.0053	--	--	--	<0.0060	--	--	--	<0.0057	--	--	--	<0.0057	--	--	NE	NE	100	NE
Carbon tetrachloride	--	--	--	<0.0019	--	--	--	<0.0021	--	--	--	<0.0024	--	--	--	<0.0023	--	--	--	<0.0023	--	--	5	30	5	10,000
Chlorobenzene	--	--	--	<0.0019	--	--	--	<0.0021	--	--	--	<0.0024	--	--	--	<0.0023	--	--	--	<0.0023	--	--	3	100	1	10,000
Chloroethane	--	--	--	<0.0096	--	--	--	<0.011	--	--	--	<0.012	--	--	--	<0.011	--	--	--	<0.011	--	--	NE	NE	100	NE
Chloroform	--	--	--	<0.0019	--	--	--	<0.0021	--	--	--	<0.0024	--	--	--	<0.0023	--	--	--	<0.0023	--	--	0.2	500	0.2	10,000
Chloromethane	--	--	--	<0.0048	--	--	--	<0.0053	--	--	--	<0.0060	--	--	--	<0.0057	--	--	--	<0.0057	--	--	NE	NE	100	NE
o-Chlorotoluene	--	--	--	<0.0048	--	--	--	<0.0053	--	--	--	<0.0060	--	--	--	<0.0057	--	--	--	<0.0057	--	--	NE	NE	100	NE
p-Chlorotoluene	--	--	--	<0.0048	--	--	--	<0.0053	--	--	--	<0.0060	--	--	--	<0.0057	--	--	--	<0.0057	--	--	NE	NE	NE	NE
Di-Isopropyl ether	--	--	--	<0.0019	--	--	--	<0.0021	--	--	--	<0.0024	--	--	--	<0.0023	--	--	--	<0.0023	--	--	NE	NE	100	NE
1,2-Dibromo-3-chloropropane	--	--	--	<0.0048	--	--	--	<0.0053	--	--	--	<0.0060	--	--	--	<0.0057	--	--	--	<0.0057	--	--	NE	NE	10	NE
Dibromochloromethane	--	--	--	<0.0048	--	--	--	<0.0053	--	--	--	<0.0060	--	--	--	<0.0057	--	--	--	<0.0057	--	--	0.03	20	0.005	5,000
1,2-Dibromoethane	--	--	--	<0.0019	--	--	--	<0.0021	--	--	--	<0.0024	--	--	--	<0.0023	--	--	--	<0.0023	--	--	0.1	1	0.1	400
1,2-Dichlorobenzene	--	--	--	<0.0019	--	--	--	<0.0021	--	--	--	<0.0024	--	--	--	<0.0023	--	--	--	<0.0023	--	--	100	300	9	10,000
1,3-Dichlorobenzene	--	--	--	<0.0019	--	--	--	<0.0021	--	--	--	<0.0024	--	--	--	<0.0023	--	--	--	<0.0023	--	--	100	100	3	5,000
1,4-Dichlorobenzene	--	--	--	<0.0019	--	--	--	<0.0021	--	--	--	<0.0024	--	--	--	<0.0023	--	--	--	<0.0023	--	--	1	80	0.7	10,000
Dichlorodifluoromethane	--	--	--	<0.0048	--	--	--	<0.0053	--	--	--	<0.0060	--	--	--	<0.0057	--	--	--	<0.0057	--	--	NE	NE	1000	NE
1,1-Dichloroethane	--	--	--	<0.0019	--	--	--	<0.0021	--	--	--	<0.0024	--	--	--	<0.0023	--	--	--	<0.0023	--	--	9	500	0.4	10,000
1,2-Dichloroethane	--	--	--	<0.0019	--	--	--	<0.0021	--	--	--	<0.0024	--	--	--	<0.0023	--	--	--	<0.0023	--	--	0.1	20	0.1	9,000
1,1-Dichloroethene	--	--	--	<0.0019	--	--	--	<0.0021	--	--	--	<0.0024	--	--	--	<0.0023	--	--	--	<0.0023	--	--	40	500	3	10,000
cis-1,2-Dichloroethene	--	--	--	<0.0019	--	--	--	<0.0021	--	--	--	<0.0024	--	--	--	<0.0023	--	--	--	<0.0023	--	--	0.1	100	0.1	5,000
trans-1,2-Dichloroethene	--	--	--	<0.0019	--	--	--	<0.0021	--	--	--	<0.0024	--	--	--	<0.0023	--	--	--	<0.0023	--	--	1	500	1	10,000
1,2-Dichloropropane	--	--	--	<0.0019	--	--	--	<0.0021	--	--	--	<0.0024	--	--	--	<0.0023	--	--	--	<0.0023	--	--	0.1	30	0.1	10,000
1,3-Dichloropropane	--	--	--	<0.0048	--	--	--	<0.0053	--	--	--	<0.0060	--	--	--	<0.0057	--	--	--	<0.0057	--	--	NE	NE	500	NE
2,2-Dichloropropane	--	--	--	<0.0048	--	--	--	<0.0053	--	--	--	<0.0060	--	--	--	<0.0057	--	--	--	<0.0057	--	--	NE	NE	NE	NE
1,1-Dichloropropene	--	--	--	<0.0048	--	--	--	<0.0053	--	--	--	<0.0060	--	--	--	<0.0057	--	--	--	<0.0057	--	--	NE	NE	NE	NE
cis-1,3-Dichloropropene	--	--	--	<0.0019	--	--	--	<0.0021	--	--	--	<0.0024	--	--	--	<0.0023	--	--	--	<0.0023	--	--	NE	NE	0.01	NE
trans-1,3-Dichloropropene	--	--	--	<0.0019	--	--	--	<0.0021	--	--	--	<0.0024	--	--	--	<0.0023	--	--	--	<0.0023	--	--	NE	NE	0.01	NE
1,4-Dioxane	--	--	--	<0.12	--	--	--	<0.13	--	--	--	<0.15	--	--	--	<0.14	--	--	--	<0.14	--	--	6	20	0.2	5,000
Ethyl Ether	--	--	--	<0.0048	--	--	--	<0.0053	--	--	--	<0.0060	--	--	--	<0.0057	--	--	--	<0.0057	--	--	NE	NE	100	NE
Ethylbenzene	--	--	--	<0.0019	--	--	--	<0.0021	--	--	--	<0.0024	--	--	--	<0.0023	--	--	--	<0.0023	--	--	500	500	40	10,000
Hexachlorobutadiene	--	--	--	<0.0048	--	--	--	<0.0053	--	--	--	<0.0060	--	--	--	<0.0057	--	--	--	<0.0057	--	--	30	30	30	1,000
2-Hexanone	--	--	--	<0.0048	--	--	--	<0.0053	--	--	--	<0.0060	--	--	--	<0.0057	--	--	--	<0.0057	--	--	NE	NE	100	NE
Isopropylbenzene	--	--	--	<0.0048	--	--	--	<0.0053	--	--	--	<0.0060	--	--	--	<0.0057	--	--	--	<0.0057	--	--	NE	NE	1000	NE
p-Isopropyltoluene	--	--	--	<0.0048	--	--	--	<0.0053	--	--	--	<0.0060	--	--	--	<0.0057	--	--	--	<0.0057	--	--	NE	NE	100	NE
Methyl Tert Butyl Ether	--	--	--	<0.0019	--	--	--	<0.0021	--	--	--	<0.0024	--	--	--	<0.0023	--	--	--	<0.0023	--	--	100	100	0.1	5,000
4-Methyl-2-pentanone (MIBK)	--	--	--	<0.0048	--	--	--	<0.0053	--	--	--	<0.0060	--	--	--	<0.0057	--	--	--	<0.0057	--	--	50	400	0.4	10,000
Methylene bromide	--	--	--	<0.0048	--	--	--	<0.0053	--	--	--	<0.0060	--	--	--	<0.0057	--	--	--	<0.0057	--	--	NE	NE	500	NE
Methylene chloride	--	--	--	<0.0019	--	--	--	<0.0021	--	--	--	<0.0024	--	--	--	<0.0023	--	--	--	<0.0023	--	--	4	400	0.1	7,000
Naphthalene	--	--	--	<0.0048	--	--	--	<0.0053	--	--	--	<0.0060	--	--	--	<0.0057	--	--	--	<0.0057	--	--	20	500	4	10,000
n-Propylbenzene	--	--	--	<0.0048	--	--	--	<0.0053	--	--	--	<0.0060	--	--	--	<0.0057	--	--	--	<0.0057	--	--	NE	NE	100	NE
Styrene	--	--	--	<0.0048	--	--	--	<0.0053	--	--	--	<0.0060	--	--	--	<0.0057	--	--	--	<0.0057	--	--	4	70	3	10,000
tert-Amyl Methyl Ether	--	--	--	<0.0048	--	--	--	<0.0053	--	--	--	<0.0060	--	--	--	<0.0057	--	--	--	<0.0057	--	--	NE	NE	NE	NE
tert-Butyl Ethyl Ether	--	--	--	<0.0019	--	--	--	<0.0021	--	--	--	<0.0024	--	--	--	<0.0023	--	--	--	<0.0023	--	--	NE	NE	NE	NE
1,1,1,2-Tetrachloroethane	--	--	--	<0.0019	--	--	--	<0.0021	--	--	--	<0.0024	--	--	--	<0.0023	--	--	--	<0.0023	--	--	0.1	80	0.1	5,000
1,1,2,2-Tetrachloroethane	--	--	--	<0.0048	--	--	--	<0.0053	--	--	--	<0.0060	--	--	--	<0.0057	--	--	--	<0.0057	--	--	0.02	10	0.005	4,000
Tetrachloroethene	--	--	--	<0.0019	--	--	--	<0.0021	--	--	--	<0.0024	--	--	--	<0.0023	--	--	--	<0.0023	--	--	10	30	1	10,000
Tetrahydrofuran	--	--	--	<0.0096	--	--	--	<0.011	--	--	--	<0.012	--	--	--	<0.011	--	--	--	<0.011	--	--	NE	NE	500	NE
Toluene	--	--	--	<0.0048	--	--	--	<0.0053	--	--	--	<0.0060	--	--	--	<0.0057	--	--	--	<0.0057	--	--	500	500	30	10,000
1,2,3-Trichlorobenzene	--	--	--	<0.0048	--	--	--	<0.0053	--	--	--	<0.0060	--	--	--	<0.0057	--	--	--	<0.0057	--	--	NE	NE	NE	NE
1,2,4-Trichlorobenzene	--	--	--	<0.0048	--	--	--	<0.0053	--	--	--	<0.0060	--	--	--	<0.0057	--	--	--	<0.0057	--	--	6	700	2	10,000
1,1,1-Trichloroethane	--	--	--	<0.0019	--	--	--	<0.0021	--	--	--	<0.0024	--	--	--	<0.0023	--	--	--	<0.0023	--	--	500	500	30	10,000
1,1,2-Trichloroethane	--	--	--	<0.0019	--	--	--	<0.0021	--	--	--	<0.0024	--	--	--	<0.0023	--	--	--	<0.0023	--	--	2	40	0.1	5,000
Trichloroethene	--	--	--	<0.0019	--	--	--	<0.0021	--	--	--	<0.0024	--	--	--	<0.0023	--	--	--	<0.0023	--	--	0.3	30	0.3	600
Trichlorofluoromethane	--	--	--	<0.0019	--	--	--	<0.0021	--	--	--	<0.0024	--	--	--	<0.0023	--	--	--	<0.0023	--	--	NE	NE	1000	NE
1,2,3-Trichloropropane	--	--	--	<0.0048	--	--	--	<0.0053	--	--	--	<0.0060	--	--	--	<0.0057	--	--	--	<0.0057	--	--	NE	NE	100	NE
1,2,4-Trimethylbenzene	--	--	--	<0.0048	--	--	--	<0.0053	--	--	--	<0.0060	--	--	--	<0.0057	--	--	--	<0.0057	--	--	NE	NE	1000	NE
1,3,5-Trimethylbenzene	--	--	--	<0.0048	--	--	--	<0.0053	--	--	--	<0.0060	--	--	--	<0.0057	--	--	--	<0.0057	--	--	NE	NE	10	NE
Vinyl chloride	--	--	--	<0.0096	--	--	--	<0.011	--	--	--	<0.012	--	--	--	<0.011	--	--	--	<0.011	--	--	0.7	1	0.7	600
m,p-Xylene	--	--	--	<0.0019	--	--	--	<0.0021	--	--	--	<0.0024	--	--	--	<0.0023	--	--	--	**0.0039**	--	--	100	500	100	10,000
o-Xylene	--	--	--	<0.0019	--	--	--	<0.0021	--	--	--	<0.0024	--	--	--	<0.0023	--	--	--	<0.0023	--	--	100	500	100	10,000
Xylene (total)	--	--	--	<0.0019	--	--	--	<0.0021	--	--	--	<0.0024	--	--	--	<0.0023	--	--	--	**0.0055**	--	--	100	500	100	10,000

NOTES:

-- is analysis not performed	mg/kg is milligrams per kilogram	VOC is volatile organic compound.
NE is not established	mg/L is milligrams per liter	<2.0 indicates not detected at or above the laboratory reporting limit of 2.0 mg/kg
ND is not detected	PID is photoionization detector	Analytes detected above the method reporting limit are in **Bold**
	ppmv is parts per million by volume	Analytes detected above MCP Reportable Concentrations are in Red.

EnviroTrac
Environmental Services

TABLE 6

SUMMARY OF SOIL ANALYTICAL DATA (BUILDING FOOTPRINT) - VOCs

Maggiore Somerville
343-351 Summer Street
Somerville, Massachusetts

Sample Date	March 28, 2017																	MCP Method 1 Soil Standards (mg/kg)		MCP Reportable Concentrations	MCP Method 3 Upper Concentrati
Sample ID	PC-13 5-10'	PC-14 0-15'	PC-14 0-5'	PC-14 10-	PC-14 5-10'	PC-15 0-15'	PC-15 0-5'	PC-15 10-15'	PC-15 5-10'	PC-16 0-5'	PC-16A 0-5'	PC-16B 0-5'	PC-16C 0-5'	PC-17 0-5' COMP	PC-17A 0-5'	PC-17B 0-5'	PC-17C 0-5'	S-1		RCS-1	
Depth (feet)	5-10 *	0-15	0-5	10-15	5-10	0-15	0-5	10-15	5-10	0-5	0-5	0-5	0-5	0-5	0-5	0-5	0-5	GW-2	GW-3		
PID (ppmv)	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL				
VOLATILE ORGANIC COMPOUNDS (mg/kg)																					
Acetone	–	**0.0377**	–		–	<0.013	–	–	–	**0.0587**	–	–	–	**0.0686**	–	–	–	50	400	6	10,000
Benzene	–	<0.00057	–	–	–	<0.00067	–	–	–	<0.00061	–	–	–	<0.00058	–	–	–	40	40	2	10,000
Bromobenzene	–	<0.0057	–	–	–	<0.0067	–	–	–	<0.0061	–	–	–	<0.0058	–	–	–	NE	NE	100	NE
Bromochloromethane	–	<0.0057	–	–	–	<0.0067	–	–	–	<0.0061	–	–	–	<0.0058	–	–	–	NE	NE	NE	NE
Bromodichloromethane	–	<0.0023	–	–	–	<0.0027	–	–	–	<0.0025	–	–	–	<0.0023	–	–	–	0.1	30	0.1	5,000
Bromoform	–	<0.0023	–	–	–	<0.0027	–	–	–	<0.0025	–	–	–	<0.0023	–	–	–	1	300	0.1	10,000
Bromomethane	–	<0.011	–	–	–	<0.013	–	–	–	<0.012	–	–	–	<0.012	–	–	–	0.5	30	0.5	6,000
2-Butanone (MEK)	–	<0.011	–	–	–	<0.013	–	–	–	<0.012	–	–	–	<0.012	–	–	–	50	400	4	10,000
n-Butylbenzene	–	<0.0057	–	–	–	<0.0067	–	–	–	<0.0061	–	–	–	<0.0058	–	–	–	NE	NE	NE	NE
sec-Butylbenzene	–	<0.0057	–	–	–	<0.0067	–	–	–	<0.0061	–	–	–	<0.0058	–	–	–	NE	NE	NE	NE
tert-Butylbenzene	–	<0.0057	–	–	–	<0.0067	–	–	–	<0.0061	–	–	–	<0.0058	–	–	–	NE	NE	100	NE
Carbon disulfide	–	<0.0057	–	–	–	<0.0067	–	–	–	<0.0061	–	–	–	<0.0058	–	–	–	NE	NE	100	NE
Carbon tetrachloride	–	<0.0023	–	–	–	<0.0027	–	–	–	<0.0025	–	–	–	<0.0023	–	–	–	5	30	5	10,000
Chlorobenzene	–	<0.0023	–	–	–	<0.0027	–	–	–	<0.0025	–	–	–	<0.0023	–	–	–	3	100	1	10,000
Chloroethane	–	<0.011	–	–	–	<0.013	–	–	–	<0.012	–	–	–	<0.012	–	–	–	NE	NE	100	NE
Chloroform	–	<0.0023	–	–	–	<0.0027	–	–	–	<0.0025	–	–	–	<0.0023	–	–	–	0.2	500	0.2	10,000
Chloromethane	–	<0.0057	–	–	–	<0.0067	–	–	–	<0.0061	–	–	–	<0.0058	–	–	–	NE	NE	100	NE
o-Chlorotoluene	–	<0.0057	–	–	–	<0.0067	–	–	–	<0.0061	–	–	–	<0.0058	–	–	–	NE	NE	100	NE
p-Chlorotoluene	–	<0.0057	–	–	–	<0.0067	–	–	–	<0.0061	–	–	–	<0.0058	–	–	–	NE	NE	NE	NE
Di-Isopropyl ether	–	<0.0023	–	–	–	<0.0027	–	–	–	<0.0025	–	–	–	<0.0023	–	–	–	NE	NE	100	NE
1,2-Dibromo-3-chloropropane	–	<0.0057	–	–	–	<0.0067	–	–	–	<0.0061	–	–	–	<0.0058	–	–	–	NE	NE	10	NE
Dibromochloromethane	–	<0.0057	–	–	–	<0.0067	–	–	–	<0.0025	–	–	–	<0.0023	–	–	–	0.03	20	0.005	5,000
1,2-Dibromoethane	–	<0.0023	–	–	–	<0.0027	–	–	–	<0.0025	–	–	–	<0.0023	–	–	–	0.1	1	0.1	400
1,2-Dichlorobenzene	–	<0.0023	–	–	–	<0.0027	–	–	–	<0.0025	–	–	–	<0.0023	–	–	–	100	300	9	10,000
1,3-Dichlorobenzene	–	<0.0023	–	–	–	<0.0027	–	–	–	<0.0025	–	–	–	<0.0023	–	–	–	100	100	3	5,000
1,4-Dichlorobenzene	–	<0.0023	–	–	–	<0.0027	–	–	–	<0.0025	–	–	–	<0.0023	–	–	–	1	80	0.7	10,000
Dichlorodifluoromethane	–	<0.0057	–	–	–	<0.0067	–	–	–	<0.0061	–	–	–	<0.0058	–	–	–	NE	NE	1000	NE
1,1-Dichloroethane	–	<0.0023	–	–	–	<0.0027	–	–	–	<0.0025	–	–	–	<0.0023	–	–	–	9	500	0.4	10,000
1,2-Dichloroethane	–	<0.0023	–	–	–	<0.0027	–	–	–	<0.0025	–	–	–	<0.0023	–	–	–	0.1	20	0.1	9,000
1,1-Dichloroethene	–	<0.0023	–	–	–	<0.0027	–	–	–	<0.0025	–	–	–	<0.0023	–	–	–	40	500	3	10,000
cis-1,2-Dichloroethene	–	<0.0023	–	–	–	<0.0027	–	–	–	<0.0025	–	–	–	<0.0023	–	–	–	0.1	100	0.1	5,000
trans-1,2-Dichloroethene	–	<0.0023	–	–	–	<0.0027	–	–	–	<0.0025	–	–	–	<0.0023	–	–	–	1	500	1	10,000
1,2-Dichloropropane	–	<0.0023	–	–	–	<0.0027	–	–	–	<0.0025	–	–	–	<0.0023	–	–	–	0.1	30	0.1	10,000
1,3-Dichloropropane	–	<0.0057	–	–	–	<0.0067	–	–	–	<0.0061	–	–	–	<0.0058	–	–	–	NE	NE	500	NE
2,2-Dichloropropane	–	<0.0057	–	–	–	<0.0067	–	–	–	<0.0061	–	–	–	<0.0058	–	–	–	NE	NE	NE	NE
1,1-Dichloropropene	–	<0.0057	–	–	–	<0.0067	–	–	–	<0.0061	–	–	–	<0.0058	–	–	–	NE	NE	NE	NE
cis-1,3-Dichloropropene	–	<0.0023	–	–	–	<0.0027	–	–	–	<0.0025	–	–	–	<0.0023	–	–	–	NE	NE	0.01	NE
trans-1,3-Dichloropropene	–	<0.0023	–	–	–	<0.0027	–	–	–	<0.0025	–	–	–	<0.0023	–	–	–	NE	NE	0.01	NE
1,4-Dioxane	–	<0.14	–	–	–	<0.17	–	–	–	<0.15	–	–	–	<0.14	–	–	–	6	20	0.2	5,000
Ethyl Ether	–	<0.0057	–	–	–	<0.0067	–	–	–	<0.0061	–	–	–	<0.0058	–	–	–	NE	NE	100	NE
Ethylbenzene	–	<0.0023	–	–	–	<0.0027	–	–	–	**0.024**	–	–	–	<0.0023	–	–	–	500	500	40	10,000
Hexachlorobutadiene	–	<0.0057	–	–	–	<0.0067	–	–	–	<0.0061	–	–	–	<0.0058	–	–	–	30	30	30	1,000
2-Hexanone	–	<0.0057	–	–	–	<0.0067	–	–	–	<0.0061	–	–	–	<0.0058	–	–	–	NE	NE	100	NE
Isopropylbenzene	–	<0.0057	–	–	–	<0.0067	–	–	–	<0.0061	–	–	–	<0.0058	–	–	–	NE	NE	1000	NE
p-Isopropyltoluene	–	<0.0057	–	–	–	<0.0067	–	–	–	<0.0061	–	–	–	<0.0058	–	–	–	NE	NE	100	NE
Methyl Tert Butyl Ether	–	<0.0023	–	–	–	<0.0027	–	–	–	<0.0025	–	–	–	<0.0023	–	–	–	100	100	0.1	5,000
4-Methyl-2-pentanone (MIBK)	–	<0.0057	–	–	–	<0.0067	–	–	–	<0.0061	–	–	–	<0.0058	–	–	–	50	400	0.4	10,000
Methylene bromide	–	<0.0057	–	–	–	<0.0067	–	–	–	<0.0061	–	–	–	<0.0058	–	–	–	NE	NE	500	NE
Methylene chloride	–	<0.0023	–	–	–	<0.0027	–	–	–	<0.0025	–	–	–	<0.0023	–	–	–	4	400	0.1	7,000
Naphthalene	–	<0.0057	–	–	–	<0.0067	–	–	–	<0.0061	–	–	–	**0.0117**	–	–	–	20	500	4	10,000
n-Propylbenzene	–	<0.0057	–	–	–	<0.0067	–	–	–	<0.0061	–	–	–	<0.0058	–	–	–	NE	NE	100	NE
Styrene	–	<0.0057	–	–	–	<0.0067	–	–	–	<0.0061	–	–	–	<0.0058	–	–	–	4	70	3	10,000
tert-Amyl Methyl Ether	–	<0.0057	–	–	–	<0.0067	–	–	–	<0.0061	–	–	–	<0.0058	–	–	–	NE	NE	NE	NE
tert-Butyl Ethyl Ether	–	<0.0023	–	–	–	<0.0027	–	–	–	<0.0025	–	–	–	<0.0023	–	–	–	NE	NE	NE	NE
1,1,1,2-Tetrachloroethane	–	<0.0023	–	–	–	<0.0027	–	–	–	<0.0025	–	–	–	<0.0023	–	–	–	0.1	80	0.1	5,000
1,1,2,2-Tetrachloroethane	–	<0.0057	–	–	–	<0.0067	–	–	–	<0.0061	–	–	–	<0.0058	–	–	–	0.02	10	0.005	4,000
Tetrachloroethene	–	<0.0023	–	–	–	<0.0027	–	–	–	<0.0025	–	–	–	<0.0023	–	–	–	10	30	1	10,000
Tetrahydrofuran	–	<0.011	–	–	–	<0.013	–	–	–	<0.012	–	–	–	<0.012	–	–	–	NE	NE	500	NE
Toluene	–	<0.0057	–	–	–	<0.0067	–	–	–	<0.0061	–	–	–	<0.0058	–	–	–	500	500	30	10,000
1,2,3-Trichlorobenzene	–	<0.0057	–	–	–	<0.0067	–	–	–	<0.0061	–	–	–	<0.0058	–	–	–	NE	NE	NE	NE
1,2,4-Trichlorobenzene	–	<0.0057	–	–	–	<0.0067	–	–	–	<0.0061	–	–	–	<0.0058	–	–	–	6	700	2	10,000
1,1,1-Trichloroethane	–	<0.0023	–	–	–	<0.0027	–	–	–	<0.0025	–	–	–	<0.0023	–	–	–	500	500	30	10,000
1,1,2-Trichloroethane	–	<0.0023	–	–	–	<0.0027	–	–	–	<0.0025	–	–	–	<0.0023	–	–	–	2	40	0.1	5,000
Trichloroethene	–	<0.0023	–	–	–	<0.0027	–	–	–	<0.0025	–	–	–	<0.0023	–	–	–	0.3	30	0.3	600
Trichlorofluoromethane	–	<0.0023	–	–	–	<0.0027	–	–	–	<0.0025	–	–	–	<0.0023	–	–	–	NE	NE	1000	NE
1,2,3-Trichloropropane	–	<0.0057	–	–	–	<0.0067	–	–	–	<0.0061	–	–	–	<0.0058	–	–	–	NE	NE	100	NE
1,2,4-Trimethylbenzene	–	<0.0057	–	–	–	<0.0067	–	–	–	<0.0061	–	–	–	<0.0058	–	–	–	NE	NE	1000	NE
1,3,5-Trimethylbenzene	–	<0.0057	–	–	–	<0.0067	–	–	–	<0.0061	–	–	–	<0.0058	–	–	–	NE	NE	10	NE
Vinyl chloride	–	<0.011	–	–	–	<0.013	–	–	–	<0.012	–	–	–	<0.012	–	–	–	0.7	1	0.7	600
m,p-Xylene	–	**0.0063**	–	–	–	**0.0045**	–	–	–	**0.121**	–	–	–	<0.0023	–	–	–	100	500	100	10,000
o-Xylene	–	**0.0026**	–	–	–	<0.0027	–	–	–	**0.0344**	–	–	–	<0.0023	–	–	–	100	500	100	10,000
Xylene (total)	–	**0.0089**	–	–	–	**0.0063**	–	–	–	**0.155**	–	–	–	<0.0023	–	–	–	100	500	100	10,000

NOTES:

-- is analysis not performed
NE is not established
ND is not detected

mg/kg is milligrams per kilogram
mg/L is milligrams per liter
PID is photoionization detector
ppmv is parts per million by volume

VOC is volatile organic compound
<2.0 indicates not detected at or above the laboratory reporting limit of 2.0 mg/kg.
Analytes detected above the method reporting limit are in **Bold**
Analytes detected above MCP Reportable Concentrations are in Red

TABLE 7

SUMMARY OF SOIL ANALYTICAL DATA (BUILDING FOOTPRINT) - EPH, VPH

Maggiore Somerville
343-351 Summer Street
Somerville, Massachusetts

Sample Date	August 8, 2016					MCP Method 1 Soil Standards (mg/kg)		MCP Reportable Concentrations (mg/kg)	MCP Method 3 Upper Concentration Limits (mg/kg)
Sample ID	B-101	B-102	MW-105	MW-106	MW-107	S-1		RCS-1	
Depth (feet)	0-10	0-10	13.5	9	13				
PID (ppmv)	BDL	BDL	BDL	BDL	BDL	GW-2	GW-3		
EXTRACTABLE PETROLEUM HYDROCARBONS (mg/kg)									
C9-C18 Aliphatics	<9.3	<11	<11	<9.7	<11	1,000	1,000	1,000	20,000
C19-C36 Aliphatics	<19	<23	<21	<19	<22	3,000	3,000	3,000	20,000
C11-C22 Aromatics	**26.7**	<23	<21	<19	<22	1,000	1,000	1,000	10,000
Acenaphthene	<0.46	<0.57	<0.54	<0.49	<0.55	1,000	1,000	4	10,000
Acenaphthylene	<0.46	<0.57	<0.54	<0.49	<0.55	600	10	1	10,000
Anthracene	<0.46	<0.57	<0.54	<0.49	<0.55	1,000	1,000	1,000	10,000
Benzo(a)anthracene	**0.8**	**1.2**	<0.54	<0.49	<0.55	7	7	7	3,000
Benzo(a)pyrene	**1.3**	**1.0**	<0.54	<0.49	<0.55	2	2	2	300
Benzo(b)fluoranthene	**2.2**	**1.93**	<0.54	<0.49	<0.55	7	7	7	3,000
Benzo(g,h,i)perylene	**1.0**	**0.6**	<0.54	<0.49	<0.55	1,000	1,000	1,000	10,000
Benzo(k)fluoranthene	<0.46	**1.6**	<0.54	<0.49	<0.55	70	70	70	10,000
Chrysene	**0.7**	**1.1**	<0.54	<0.49	<0.55	70	70	70	10,000
Dibenz(a,h)anthracene	<0.46	<0.57	<0.54	<0.49	<0.55	0.7	0.7	0.7	300
Fluoranthene	**1.1**	**1.7**	<0.54	<0.49	<0.55	1,000	1,000	1,000	10,000
Fluorene	<0.46	<0.57	<0.54	<0.49	<0.55	1,000	1,000	1,000	10,000
Indeno(1,2,3-cd)pyrene	<0.46	<0.57	<0.54	<0.49	<0.55	7	7	7	3,000
2-Methylnaphthalene	<0.46	<0.57	<0.54	<0.49	<0.55	80	300	0.7	5,000
Naphthalene	<0.46	<0.57	<0.54	<0.49	<0.55	40	500	4	10,000
Phenanthrene	<0.46	**0.6**	<0.54	<0.49	<0.55	500	500	10	10,000
Pyrene	**1.1**	**1.5**	<0.54	<0.49	<0.55	1,000	1,000	1,000	10,000
VOLATILE PETROLEUM HYDROCARBONS (mg/kg)									
C5- C8 Aliphatics	<6.3	<8.6	--	--	--	100	100	100	5,000
C9- C12 Aliphatics	<6.3	<8.6	--	--	--	1,000	1,000	1,000	20,000
C9- C10 Aromatics	<6.3	<8.6	--	--	--	100	100	100	5,000
Benzene	<0.31	<0.43	--	--	--	40	40	2	10,000
Ethylbenzene	<0.31	<0.43	--	--	--	500	500	40	10,000
Methyl Tert Butyl Ether	<0.063	<0.086	--	--	--	100	100	0.1	5,000
Naphthalene	<0.31	<0.43	--	--	--	20	500	4	10,000
Toluene	<0.31	<0.43	--	--	--	500	500	30	10,000
m,p-Xylene	<0.31	<0.43	--	--	--	100	500	100	10,000
o-Xylene	<0.31	<0.43	--	--	--	100	500	100	10,000
Total Xylenes	<0.62	<0.86	--	--	--	100	500	100	10,000

NOTES:

-- is analysis not performed.
NE is not established.
ND is not detected.
ppmv is parts per million by volume.
mg/kg is milligrams per kilogram.
mg/L is milligrams per liter

EPH is extractable petroleum hydrocarbons
VPH is volatile petroleum hydrocarbons
<2.0 indicates not detected at or above the laboratory reporting limit of 2.0 mg/kg.
Analytes detected above the method reporting limit are in **Bold**.
Analytes detected above MCP Reportable Concentrations are in Red.
PID is photoionization detector.

TABLE 8
SUMMARY OF SOIL ANALYTICAL DATA (BUILDING FOOTPRINT) - ALL OTHER ANALYSES

Maggiore Somerville
343-351 Summer Street
Somerville, Massachusetts

Sample Date	August 8, 2016					March 28, 2017						MCP Method 1 Soil Standards (mg/kg)		MCP Reportable Concentrations (mg/kg)	MCP Method 3 Upper Concentration Limits (mg/kg)
Sample ID	B-101	B-102	MW-105	MW-106	MW-107	PC-1 0-15'	PC-1 0-5'	PC-1 10-15'	PC-1 5-10'	PC-2 0-15'	PC-2 0-5'	S-1		RCS-1	
Depth (feet)	0-10	0-10	13.5	9	13	0-15	0-5	10-15	5-10	0-15	0-5				
PID (ppmv)	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	GW-2	GW-3		
SEMI-VOLATILE ORGANIC COMPOUNDS 8270D (mg/kg)															
Benzoic acid	<0.51	<0.62	--	--	--	<0.57	--	--	--	<0.59	--	NE	NE	1000	NE
2-Chlorophenol	<0.25	<0.31	--	--	--	<0.28	--	--	--	<0.30	--	100	100	0.7	3,000
4-Chloro-3-methyl phenol	<0.51	<0.62	--	--	--	<0.57	--	--	--	<0.59	--	NE	NE	1000	NE
2,4-Dichlorophenol	<0.51	<0.62	--	--	--	<0.57	--	--	--	<0.59	--	60	40	0.7	8,000
2,4-Dimethylphenol	<0.51	<0.62	--	--	--	<0.57	--	--	--	<0.59	--	100	500	0.7	10,000
2,4-Dinitrophenol	<0.51	<0.62	--	--	--	<0.57	--	--	--	<0.59	--	50	50	3	8,000
2-Methylphenol	<0.51	<0.62	--	--	--	<0.57	--	--	--	<0.59	--	NE	NE	500	NE
3&4-Methylphenol	<0.51	<0.62	--	--	--	<0.57	--	--	--	<0.59	--	NE	NE	500	NE
2-Nitrophenol	<0.51	<0.62	--	--	--	<0.57	--	--	--	<0.59	--	NE	NE	100	NE
4-Nitrophenol	<0.51	<0.62	--	--	--	<0.57	--	--	--	<0.59	--	NE	NE	100	NE
Pentachlorophenol	<0.51	<0.62	--	--	--	<0.57	--	--	--	<0.59	--	3	3	3	700
Phenol	<0.25	<0.31	--	--	--	<0.28	--	--	--	<0.30	--	50	20	1	10,000
2,4,5-Trichlorophenol	<0.51	<0.62	--	--	--	<0.57	--	--	--	<0.59	--	1000	600	4	10,000
2,4,6-Trichlorophenol	<0.51	<0.62	--	--	--	<0.57	--	--	--	<0.59	--	20	20	0.7	4,000
Acenaphthene	<0.10	<0.12	--	--	--	**1.1**	--	--	--	<0.12	--	1000	1000	4	10,000
Acenaphthylene	**0.1**	**0.3**	--	--	--	0.705	--	--	--	<0.12	--	600	10	1	10,000
Acetophenone	<0.51	<0.62	--	--	--	<0.57	--	--	--	<0.59	--	NE	NE	1000	NE
Aniline	<0.51	<0.62	--	--	--	<0.57	--	--	--	<0.59	--	NE	NE	1000	NE
Anthracene	<0.10	0.4	--	--	--	**5**	--	--	--	**0.209**	--	1000	1000	1000	10,000
Benzo(a)anthracene	**0.6**	**2.0**	--	--	--	**11.6**	--	--	--	**0.628**	--	7	7	7	3,000
Benzo(a)pyrene	**0.9**	**1.6**	--	--	--	**9.02**	--	--	--	**0.58**	--	2	2	2	300
Benzo(b)fluoranthene	**0.8**	**1.5**	--	--	--	**9**	--	--	--	0.436	--	7	7	7	3,000
Benzo(g,h,i)perylene	**0.7**	**1.1**	--	--	--	**4.92**	--	--	--	0.361	--	1000	1000	1000	10,000
Benzo(k)fluoranthene	**0.7**	**1.6**	--	--	--	**5.68**	--	--	--	**0.5**	--	70	70	70	10,000
4-Bromophenyl phenyl ether	<0.25	<0.31	--	--	--	<0.28	--	--	--	<0.30	--	NE	NE	100	NE
Butyl benzyl phthalate	<0.25	<0.31	--	--	--	<0.28	--	--	--	<0.30	--	NE	NE	100	NE
2-Chloronaphthalene	<0.25	<0.31	--	--	--	<0.28	--	--	--	<0.30	--	NE	NE	1000	NE
4-Chloroaniline	<0.51	<0.62	--	--	--	<0.57	--	--	--	<0.59	--	NE	NE	1	400
Chrysene	**0.6**	**1.9**	--	--	--	**10.2**	--	--	--	0.542	--	70	70	70	10,000
bis(2-Chloroethoxy)methane	<0.25	<0.31	--	--	--	<0.28	--	--	--	<0.30	--	NE	NE	500	NE
bis(2-Chloroethyl)ether	<0.25	<0.31	--	--	--	<0.28	--	--	--	<0.30	--	0.7	2	0.7	800
bis(2-Chloroisopropyl)ether	<0.25	<0.31	--	--	--	<0.28	--	--	--	<0.30	--	0.7	30	0.7	10,000
1,2-Dichlorobenzene	<0.25	<0.31	--	--	--	<0.28	--	--	--	<0.30	--	100	30	9	10,000
1,2-Diphenylhydrazine	<0.25	<0.31	--	--	--	<0.28	--	--	--	<0.30	--	NE	NE	50	NE
1,3-Dichlorobenzene	<0.25	<0.31	--	--	--	<0.28	--	--	--	<0.30	--	100	100	3	5,000
1,4-Dichlorobenzene	<0.25	<0.31	--	--	--	<0.28	--	--	--	<0.30	--	1	80	0.7	10,000
2,4-Dinitrotoluene	<0.51	<0.62	--	--	--	<0.57	--	--	--	<0.59	--	2	2	0.7	800
2,6-Dinitrotoluene	<0.51	<0.62	--	--	--	<0.57	--	--	--	<0.59	--	NE	NE	100	NE
3,3'-Dichlorobenzidine	<0.51	<0.62	--	--	--	<0.57	--	--	--	<0.59	--	3	3	3	1,000
Dibenzo(a,h)anthracene	**0.2**	**0.3**	--	--	--	**2.06**	--	--	--	<0.12	--	0.7	0.7	0.7	300
Dibenzofuran	<0.10	<0.12	--	--	--	**1.06**	--	--	--	<0.12	--	NE	NE	100	NE
Di-n-butyl phthalate	<0.25	<0.31	--	--	--	<0.28	--	--	--	<0.30	--	NE	NE	50	NE
Di-n-octyl phthalate	<0.25	<0.31	--	--	--	<0.28	--	--	--	<0.30	--	NE	NE	1000	NE
Diethyl phthalate	<0.25	<0.31	--	--	--	<0.28	--	--	--	<0.30	--	200	300	10	10,000
Dimethyl phthalate	<0.25	<0.31	--	--	--	<0.28	--	--	--	<0.30	--	50	600	0.7	10,000
bis(2-Ethylhexyl)phthalate	<0.25	<0.31	--	--	--	<0.28	--	--	--	<0.30	--	90	90	90	10,000
Fluoranthene	**1.0**	**3.6**	--	--	--	**27.8**	--	--	--	**1.27**	--	1000	1000	1000	10,000
Fluorene	<0.10	<0.12	--	--	--	**1.71**	--	--	--	<0.12	--	1000	1000	1000	10,000
Hexachlorobenzene	<0.25	<0.31	--	--	--	<0.28	--	--	--	<0.30	--	0.7	0.7	0.7	8
Hexachlorobutadiene	<0.25	<0.31	--	--	--	<0.28	--	--	--	<0.30	--	30	30	30	1,000
Hexachlorocyclopentadiene	<0.51	<0.62	--	--	--	<0.57	--	--	--	<0.59	--	NE	NE	50	NE
Hexachloroethane	<0.25	<0.31	--	--	--	<0.28	--	--	--	<0.30	--	3	50	0.7	2,000
Indeno(1,2,3-cd)pyrene	**0.7**	**1.1**	--	--	--	**5.73**	--	--	--	**0.394**	--	7	7	7	3,000
Isophorone	<0.25	<0.31	--	--	--	<0.28	--	--	--	<0.30	--	NE	NE	100	NE
2-Methylnaphthalene	<0.10	<0.12	--	--	--	0.249	--	--	--	<0.12	--	80	300	0.7	5,000
Naphthalene	<0.10	<0.12	--	--	--	**0.517**	--	--	--	<0.12	--	20	500	4	10,000
Nitrobenzene	<0.25	<0.31	--	--	--	<0.28	--	--	--	<0.30	--	NE	NE	500	NE
N-Nitroso-di-n-propylamine	<0.25	<0.31	--	--	--	<0.28	--	--	--	<0.30	--	NE	NE	50	NE
N-Nitrosodiphenylamine	<0.25	<0.31	--	--	--	<0.28	--	--	--	<0.30	--	NE	NE	100	NE
Phenanthrene	**0.3**	**1.3**	--	--	--	**20.8**	--	--	--	**0.781**	--	500	500	10	10,000
Pyrene	**1.1**	**3.5**	--	--	--	**21.9**	--	--	--	**1.17**	--	1000	1000	1000	10,000
1,2,4-Trichlorobenzene	<0.25	<0.31	--	--	--	<0.28	--	--	--	<0.30	--	6	700	2	10,000
TOTAL PETROLEUM HYDROCARBONS - GASOLINE RANGE ORGANICS 8015 (mg/kg)															
TPH-GRO (VOA)	--	--	--	--	--	<5.8	--	--	--	<7.2	--	NE	NE	NE	NE
PESTICIDES 8081B (mg/kg)															
Aldrin	--	--	--	--	--	<0.0056	--	--	--	<0.0060	--	0.08	0.08	0.08	30
alpha-BHC	--	--	--	--	--	<0.0056	--	--	--	<0.0060	--	NE	NE	50	NE
beta-BHC	--	--	--	--	--	<0.0056	--	--	--	<0.0060	--	NE	NE	10	NE
delta-BHC	--	--	--	--	--	<0.0056	--	--	--	<0.0060	--	NE	NE	10	NE
gamma-BHC (Lindane)	--	--	--	--	--	<0.0030	--	--	--	<0.0030	--	1	0.5	0.003	600
Chlordane	--	--	--	--	--	<0.056	--	--	--	<0.060	--	5	5	5	600
Dieldrin	--	--	--	--	--	<0.0056	--	--	--	<0.0060	--	0.08	0.08	0.08	30
4,4'-DDD	--	--	--	--	--	<0.0056	--	--	--	<0.0060	--	8	8	8	600
4,4'-DDE	--	--	--	--	--	<0.0056	--	--	--	<0.0060	--	6	6	6	600
4,4'-DDT	--	--	--	--	--	<0.0056	--	--	--	<0.0060	--	6	6	6	600
Endrin	--	--	--	--	--	<0.0056	--	--	--	<0.0060	--	10	10	10	200
Endosulfan sulfate	--	--	--	--	--	<0.0056	--	--	--	<0.0060	--	NE	NE	NE	NE
Endosulfan-I	--	--	--	--	--	<0.0056	--	--	--	<0.0060	--	300	1	0.5	5,000
Endosulfan-II	--	--	--	--	--	<0.0056	--	--	--	<0.0060	--	300	1	0.5	5,000
Heptachlor	--	--	--	--	--	<0.0056	--	--	--	<0.0060	--	0.3	0.3	0.3	100
Heptachlor epoxide	--	--	--	--	--	<0.0056	--	--	--	<0.0060	--	0.1	0.1	0.1	10
Hexachlorobenzene	--	--	--	--	--	<0.0056	--	--	--	<0.0060	--	0.7	0.7	0.7	8
Methoxychlor	--	--	--	--	--	<0.0056	--	--	--	<0.0060	--	200	200	200	4,000
Endrin ketone	--	--	--	--	--	<0.0056	--	--	--	<0.0060	--	NE	NE	NE	NE
POLYCHLORINATED BIPHENYLS 8082A (mg/kg)															
Aroclor 1016	<0.034	<0.040	--	--	--	<0.028	--	--	--	<0.030	--	1	1	1	100
Aroclor 1221	<0.034	<0.040	--	--	--	<0.028	--	--	--	<0.030	--	1	1	1	100
Aroclor 1232	<0.034	<0.040	--	--	--	<0.028	--	--	--	<0.030	--	1	1	1	100
Aroclor 1242	<0.034	<0.040	--	--	--	<0.028	--	--	--	<0.030	--	1	1	1	100
Aroclor 1248	<0.034	<0.040	--	--	--	<0.028	--	--	--	<0.030	--	1	1	1	100
Aroclor 1254	<0.034	<0.040	--	--	--	<0.028	--	--	--	<0.030	--	1	1	1	100
Aroclor 1260	<0.034	<0.040	--	--	--	<0.028	--	--	--	<0.030	--	1	1	1	100
Aroclor 1262	<0.034	<0.040	--	--	--	<0.028	--	--	--	<0.030	--	1	1	1	100
Aroclor 1268	<0.034	<0.040	--	--	--	<0.028	--	--	--	<0.030	--	1	1	1	100
HERBICIDES 8151 (mg/kg)															
2,4-D	--	--	--	--	--	<0.019	--	--	--	<0.019	--	NE	NE	NE	NE
2,4,5-TP (Silvex)	--	--	--	--	--	<0.0037	--	--	--	<0.0039	--	NE	NE	NE	NE
2,4,5-T	--	--	--	--	--	<0.0037	--	--	--	<0.0039	--	NE	NE	NE	NE
TOTAL PETROLEUM HYDROCARBONS - DIESEL RANGE ORGANICS 8015 (mg/kg)															
TPH-DRO (Semi-VOA)	--	--	--	--	--	197	--	--	--	**26.5**	--	NE	NE	NE	NE
TOTAL METALS (mg/kg)															
Antimony	<0.88	<0.95	<0.96	<0.90	<0.96	--	--	--	--	--	--	20	20	20	300
Arsenic	**5.7**	**13.5**	**1.5**	**2.2**	**12.9**	**3.2**	-	-	-	**5.8**	-	20	20	20	500
Barium	**21.8**	**195**	**11.6**	**22.9**	**95.3**	**54.1**	-	-	-	**31.9**	-	1,000	1,000	1000	10,000
Beryllium	**0.4**	**0.9**	<0.38	<0.36	**0.8**	-	-	-	-	-	-	90	90	90	2,000
Cadmium	<0.35	**0.5**	<0.38	<0.36	<0.38	<0.58	-	-	-	<0.63	-	70	70	70	1,000
Chromium	**12.9**	**40.4**	**9.7**	**13.5**	**46.5**	**23.9**	-	-	-	**18.5**	-	100	100	100	2,000
Lead	**9.1**	**431**	**2.6**	**4.1**	**11.4**	**46.3**	**86.9**	**9.6**	**17.7**	**8.7**	**23.9**	200	200	200	6,000
Mercury	<0.033	**3.0**	<0.033	<0.034	<0.035	<0.036	-	-	-	<0.040	-	20	20	20	300
Nickel	**10.7**	**30.0**	**7.5**	**11.5**	**33.5**	-	-	-	-	-	-	600	600	20	10,000
Selenium	<0.88	<0.95	<0.96	<0.90	<0.96	<2.3	-	-	-	<2.5	-	400	400	400	7,000
Silver	<0.44	<0.48	<0.48	<0.45	<0.48	**0.96**	-	-	-	**0.71**	-	100	100	100	2,000
Thallium	<0.88	<0.95	<0.96	<0.90	<0.96	-	-	-	-	-	-	8	8	8	800
Vanadium	**18.8**	**50.0**	**14.0**	**18.5**	**55.6**	-	-	-	-	-	-	400	400	400	7,000
Zinc	**25.9**	**245**	**25.9**	**28.3**	**68.5**	-	-	-	-	-	-	1,000	1,000	1000	10,000

NOTES:

-- is analysis not performed.	mg/kg is milligrams per kilogram.	SVOC is semi-volatile organic compound.
NE is not established	mg/L is milligrams per liter.	<2.0 indicates not detected at or above the laboratory reporting limit of 2.0 mg/kg.
ND is not detected.	PID is photoionization detector.	Analytes detected above the method reporting limit are in **Bold**
su is standard units.	ppmv is parts per million by volume.	Analytes detected above MCP Reportable Concentrations are in **Red**

TABLE 8

SUMMARY OF SOIL ANALYTICAL DATA (BUILDING FOOTPRINT) - ALL OTHER ANALYSES

Maggiore Somerville
343-351 Summer Street
Somerville, Massachusetts

Sample Date	March 28, 2017										MCP Method 1 Soil Standards (mg/kg)		MCP Reportable Concentrations (mg/kg)	MCP Method 3 Upper Concentration Limits (mg/kg)
Sample ID	PC-2 10-15'	PC-2 5-10'	PC-3 0-15' COMP	PC-3 0-5'	PC-3 10-15'	PC-3 5-10'	PC-4 0-15'	PC-4 0-5'	PC-4 10-15'	PC-4 5-10'				
Depth (feet)	10-15	5-10	0-15	0-5	10-15	5-10	0-15	0-5	10-15	5-10	S-1			
PID (ppmv)	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	GW-2	GW-3	RCS-1	
SEMI-VOLATILE ORGANIC COMPOUNDS 8270D (mg/kg)														
Benzoic acid	--	--	<0.57	--	--	--	<0.61	--	--	--	NE	NE	1000	NE
2-Chlorophenol	--	--	<0.29	--	--	--	<0.30	--	--	--	100	100	0.7	3,000
4-Chloro-3-methyl phenol	--	--	<0.57	--	--	--	<0.61	--	--	--	NE	NE	1000	NE
2,4-Dichlorophenol	--	--	<0.57	--	--	--	<0.61	--	--	--	60	40	0.7	8,000
2,4-Dimethylphenol	--	--	<0.57	--	--	--	<0.61	--	--	--	100	500	0.7	10,000
2,4-Dinitrophenol	--	--	<0.57	--	--	--	<0.61	--	--	--	50	50	3	8,000
2-Methylphenol	--	--	<0.57	--	--	--	<0.61	--	--	--	NE	NE	500	NE
3&4-Methylphenol	--	--	<0.57	--	--	--	<0.61	--	--	--	NE	NE	500	NE
2-Nitrophenol	--	--	<0.57	--	--	--	<0.61	--	--	--	NE	NE	100	NE
4-Nitrophenol	--	--	<0.57	--	--	--	<0.61	--	--	--	NE	NE	100	NE
Pentachlorophenol	--	--	<0.57	--	--	--	<0.61	--	--	--	3	3	3	700
Phenol	--	--	<0.29	--	--	--	<0.30	--	--	--	50	20	1	10,000
2,4,5-Trichlorophenol	--	--	<0.57	--	--	--	<0.61	--	--	--	1000	600	4	10,000
2,4,6-Trichlorophenol	--	--	<0.57	--	--	--	<0.61	--	--	--	20	20	0.7	4,000
Acenaphthene	--	--	<0.11	--	--	--	**0.907**	--	--	--	1000	1000	4	10,000
Acenaphthylene	--	--	**0.127**	--	--	--	**2.65**	--	--	--	600	10	1	10,000
Acetophenone	--	--	<0.57	--	--	--	<0.61	--	--	--	NE	NE	1000	NE
Aniline	--	--	<0.57	--	--	--	<0.61	--	--	--	NE	NE	1000	NE
Anthracene	--	--	**0.3**	--	--	--	5.5	--	--	--	1000	1000	1000	10,000
Benzo(a)anthracene	--	--	**1.31**	--	--	--	**10.8**	--	--	--	7	7	7	3,000
Benzo(a)pyrene	--	--	**1.27**	--	--	--	**7.7**	--	--	--	2	2	2	300
Benzo(b)fluoranthene	--	--	**0.944**	--	--	--	**7.33**	--	--	--	7	7	7	3,000
Benzo(g,h,i)perylene	--	--	**0.709**	--	--	--	**3.81**	--	--	--	1000	1000	1000	10,000
Benzo(k)fluoranthene	--	--	**0.939**	--	--	--	**5.68**	--	--	--	70	70	70	10,000
4-Bromophenyl phenyl ether	--	--	<0.29	--	--	--	<0.30	--	--	--	NE	NE	100	NE
Butyl benzyl phthalate	--	--	<0.29	--	--	--	<0.30	--	--	--	NE	NE	100	NE
2-Chloronaphthalene	--	--	<0.29	--	--	--	<0.30	--	--	--	NE	NE	1000	NE
4-Chloroaniline	--	--	<0.57	--	--	--	<0.61	--	--	--	NE	NE	1	400
Chrysene	--	--	**1.13**	--	--	--	**10**	--	--	--	70	70	70	10,000
bis(2-Chloroethoxy)methane	--	--	<0.29	--	--	--	<0.30	--	--	--	NE	NE	500	NE
bis(2-Chloroethyl)ether	--	--	<0.29	--	--	--	<0.30	--	--	--	0.7	2	0.7	800
bis(2-Chloroisopropyl)ether	--	--	<0.29	--	--	--	<0.30	--	--	--	0.7	30	0.7	10,000
1,2-Dichlorobenzene	--	--	<0.29	--	--	--	<0.30	--	--	--	100	30	9	10,000
1,2-Diphenylhydrazine	--	--	<0.29	--	--	--	<0.30	--	--	--	NE	NE	50	NE
1,3-Dichlorobenzene	--	--	<0.29	--	--	--	<0.30	--	--	--	100	100	3	5,000
1,4-Dichlorobenzene	--	--	<0.29	--	--	--	<0.30	--	--	--	1	80	0.7	10,000
2,4-Dinitrotoluene	--	--	<0.57	--	--	--	<0.61	--	--	--	2	2	0.7	800
2,6-Dinitrotoluene	--	--	<0.57	--	--	--	<0.61	--	--	--	NE	NE	100	NE
3,3'-Dichlorobenzidine	--	--	<0.57	--	--	--	<0.61	--	--	--	3	3	3	1,000
Dibenzo(a,h)anthracene	--	--	**0.191**	--	--	--	**1.57**	--	--	--	0.7	0.7	0.7	300
Dibenzofuran	--	--	<0.11	--	--	--	**2.12**	--	--	--	NE	NE	100	NE
Di-n-butyl phthalate	--	--	<0.29	--	--	--	<0.30	--	--	--	NE	NE	50	NE
Di-n-octyl phthalate	--	--	<0.29	--	--	--	<0.30	--	--	--	NE	NE	1000	NE
Diethyl phthalate	--	--	<0.29	--	--	--	<0.30	--	--	--	200	300	10	10,000
Dimethyl phthalate	--	--	<0.29	--	--	--	<0.30	--	--	--	50	600	0.7	10,000
bis(2-Ethylhexyl)phthalate	--	--	<0.29	--	--	--	<0.30	--	--	--	90	90	90	10,000
Fluoranthene	--	--	**2.43**	--	--	--	**29.4**	--	--	--	1000	1000	1000	10,000
Fluorene	--	--	<0.11	--	--	--	**4.59**	--	--	--	1000	1000	1000	10,000
Hexachlorobenzene	--	--	<0.29	--	--	--	<0.30	--	--	--	0.7	0.7	0.7	8
Hexachlorobutadiene	--	--	<0.29	--	--	--	<0.30	--	--	--	30	30	30	1,000
Hexachlorocyclopentadiene	--	--	<0.57	--	--	--	<0.61	--	--	--	NE	NE	50	NE
Hexachloroethane	--	--	<0.29	--	--	--	<0.30	--	--	--	3	50	0.7	2,000
Indeno(1,2,3-cd)pyrene	--	--	**0.762**	--	--	--	**4.71**	--	--	--	7	7	7	3,000
Isophorone	--	--	<0.29	--	--	--	<0.30	--	--	--	NE	NE	100	NE
2-Methylnaphthalene	--	--	<0.11	--	--	--	**0.463**	--	--	--	80	300	0.7	5,000
Naphthalene	--	--	<0.11	--	--	--	**0.259**	--	--	--	20	500	4	10,000
Nitrobenzene	--	--	<0.29	--	--	--	<0.30	--	--	--	NE	NE	500	NE
N-Nitroso-di-n-propylamine	--	--	<0.29	--	--	--	<0.30	--	--	--	NE	NE	50	NE
N-Nitrosodiphenylamine	--	--	<0.29	--	--	--	<0.30	--	--	--	NE	NE	100	NE
Phenanthrene	--	--	**1.04**	--	--	--	**33.5**	--	--	--	500	500	10	10,000
Pyrene	--	--	**2.49**	--	--	--	**23**	--	--	--	1000	1000	1000	10,000
1,2,4-Trichlorobenzene	--	--	<0.29	--	--	--	<0.30	--	--	--	6	700	2	10,000
TOTAL PETROLEUM HYDROCARBONS - GASOLINE RANGE ORGANICS 8015 (mg/kg)														
TPH-GRO (VOA)	--	--	<7.2	--	--	--	<8.0	--	--	--	NE	NE	NE	NE
PESTICIDES 8081B (mg/kg)														
Aldrin	--	--	<0.0057	--	--	--	<0.0061	--	--	--	0.08	0.08	0.08	30
alpha-BHC	--	--	<0.0057	--	--	--	<0.0061	--	--	--	NE	NE	50	NE
beta-BHC	--	--	<0.0057	--	--	--	<0.0061	--	--	--	NE	NE	10	NE
delta-BHC	--	--	<0.0057	--	--	--	<0.0061	--	--	--	NE	NE	10	NE
gamma-BHC (Lindane)	--	--	<0.0030	--	--	--	<0.0030	--	--	--	1	0.5	0.003	600
Chlordane	--	--	<0.057	--	--	--	<0.061	--	--	--	5	5	5	600
Dieldrin	--	--	<0.0057	--	--	--	<0.0061	--	--	--	0.08	0.08	0.08	30
4,4'-DDD	--	--	<0.0057	--	--	--	<0.0061	--	--	--	8	8	8	600
4,4'-DDE	--	--	<0.0057	--	--	--	<0.0061	--	--	--	6	6	6	600
4,4'-DDT	--	--	<0.0057	--	--	--	**0.0103**	--	--	--	6	6	6	600
Endrin	--	--	<0.0057	--	--	--	<0.0061	--	--	--	10	10	10	200
Endosulfan sulfate	--	--	<0.0057	--	--	--	<0.0061	--	--	--	NE	NE	NE	NE
Endosulfan-I	--	--	<0.0057	--	--	--	<0.0061	--	--	--	300	1	0.5	5,000
Endosulfan-II	--	--	<0.0057	--	--	--	<0.0061	--	--	--	300	1	0.5	5,000
Heptachlor	--	--	<0.0057	--	--	--	<0.0061	--	--	--	0.3	0.3	0.3	100
Heptachlor epoxide	--	--	<0.0057	--	--	--	<0.0061	--	--	--	0.1	0.1	0.1	10
Hexachlorobenzene	--	--	<0.0057	--	--	--	<0.0061	--	--	--	0.7	0.7	0.7	8
Methoxychlor	--	--	<0.0057	--	--	--	<0.0061	--	--	--	200	200	200	4,000
Endrin ketone	--	--	<0.0057	--	--	--	<0.0061	--	--	--	NE	NE	NE	NE
POLYCHLORINATED BIPHENYLS 8082A (mg/kg)														
Aroclor 1016	--	--	<0.029	--	--	--	<0.031	--	--	--	1	1	1	100
Aroclor 1221	--	--	<0.029	--	--	--	<0.031	--	--	--	1	1	1	100
Aroclor 1232	--	--	<0.029	--	--	--	<0.031	--	--	--	1	1	1	100
Aroclor 1242	--	--	<0.029	--	--	--	<0.031	--	--	--	1	1	1	100
Aroclor 1248	--	--	<0.029	--	--	--	<0.031	--	--	--	1	1	1	100
Aroclor 1254	--	--	<0.029	--	--	--	<0.031	--	--	--	1	1	1	100
Aroclor 1260	--	--	<0.029	--	--	--	<0.031	--	--	--	1	1	1	100
Aroclor 1262	--	--	<0.029	--	--	--	<0.031	--	--	--	1	1	1	100
Aroclor 1268	--	--	<0.029	--	--	--	<0.031	--	--	--	1	1	1	100
HERBICIDES 8151 (mg/kg)														
2,4-D	--	--	<0.019	--	--	--	<0.020	-	-	-	NE	NE	NE	NE
2,4,5-TP (Silvex)	--	--	<0.0039	--	--	--	<0.0041	-	-	-	NE	NE	NE	NE
2,4,5-T	--	--	<0.0039	--	--	--	<0.0041	-	-	-	NE	NE	NE	NE
TOTAL PETROLEUM HYDROCARBONS - DIESEL RANGE ORGANICS 8015 (mg/kg)														
TPH-DRO (Semi-VOA)	--	--	**135**	--	--	--	**207**	-	-	-	NE	NE	NE	NE
TOTAL METALS (mg/kg)														
Antimony	--	--	--	--	--	--	--	--	--	--	20	20	20	300
Arsenic	-	-	**7.1**	-	-	-	**10.4**	-	-	-	20	20	20	500
Barium	-	-	**66.6**	-	-	-	**100**	-	-	-	1,000	1,000	1000	10,000
Beryllium	-	-	-	-	-	-	-	-	-	-	90	90	90	2,000
Cadmium	-	-	<0.57	-	-	-	<0.67	-	-	-	70	70	70	1,000
Chromium	-	-	**27.1**	-	-	-	**36.6**	-	-	-	100	100	100	2,000
Lead	**11.2**	**6.4**	**44.7**	**20.1**	**11.3**	**8.6**	**63.5**	**99.9**	**16.8**	**22.7**	200	200	200	6,000
Mercury	-	-	<0.039	-	-	-	**0.058**	-	-	-	20	20	20	300
Nickel	-	-	-	-	-	-	-	-	-	-	600	600	20	10,000
Selenium	-	-	<2.3	-	-	-	<2.7	-	-	-	400	400	400	7,000
Silver	-	-	**0.85**	-	-	-	**0.75**	-	-	-	100	100	100	2,000
Thallium	-	-	-	-	-	-	-	-	-	-	8	8	8	800
Vanadium	-	-	-	-	-	-	-	-	-	-	400	400	400	7,000
Zinc	-	-	-	-	-	-	-	-	-	-	1,000	1,000	1000	10,000

NOTES:

-- is analysis not performed.	mg/kg is milligrams per kilogram.	SVOC is semi-volatile organic compound.
NE is not established	mg/L is milligrams per liter.	<2.0 indicates not detected at or above the laboratory reporting limit of 2.0 mg/kg
ND is not detected.	PID is photoionization detector.	Analytes detected above the method reporting limit are in **Bold**
su is standard units	ppmv is parts per million by volume.	Analytes detected above MCP Reportable Concentrations are in Red.

TABLE 8

SUMMARY OF SOIL ANALYTICAL DATA (BUILDING FOOTPRINT) - ALL OTHER ANALYSES

Maggiore Somerville
343-351 Summer Street
Somerville, Massachusetts

Sample Date	March 28, 2017										MCP Method 1 Soil Standards (mg/kg)		MCP Reportable Concentrations (mg/kg)	MCP Method 3 Upper Concentration Limits (mg/kg)
Sample ID	PC-5 0-15'	PC-5 0-5'	PC-5 10-15'	PC-5 5-10'	PC-6 0-15'	PC-6 0-5'	PC-6 10-15'	PC-6 5-10'	PC-7 0-15'	PC-7 0-5'	S-1			
Depth (feet)	0-15	0-5	10-15	5-10	0-15	0-5	10-15	5-10	0-15	0-5				
PID (ppmv)	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	GW-2	GW-3	RCS-1	
SEMI-VOLATILE ORGANIC COMPOUNDS 8270D (mg/kg)														
Benzoic acid	<0.60	--	--	--	<0.56	--	--	--	<0.58	--	NE	NE	1000	NE
2-Chlorophenol	<0.30	--	--	--	<0.28	--	--	--	<0.29	--	100	100	0.7	3,000
4-Chloro-3-methyl phenol	<0.60	--	--	--	<0.56	--	--	--	<0.58	--	NE	NE	1000	NE
2,4-Dichlorophenol	<0.60	--	--	--	<0.56	--	--	--	<0.58	--	60	40	0.7	8,000
2,4-Dimethylphenol	<0.60	--	--	--	<0.56	--	--	--	<0.58	--	100	500	0.7	10,000
2,4-Dinitrophenol	<0.60	--	--	--	<0.56	--	--	--	<0.58	--	50	50	3	8,000
2-Methylphenol	<0.60	--	--	--	<0.56	--	--	--	<0.58	--	NE	NE	500	NE
3&4-Methylphenol	<0.60	--	--	--	<0.56	--	--	--	<0.58	--	NE	NE	500	NE
2-Nitrophenol	<0.60	--	--	--	<0.56	--	--	--	<0.58	--	NE	NE	100	NE
4-Nitrophenol	<0.60	--	--	--	<0.56	--	--	--	<0.58	--	NE	NE	100	NE
Pentachlorophenol	<0.60	--	--	--	<0.56	--	--	--	<0.58	--	3	3	3	700
Phenol	<0.30	--	--	--	<0.28	--	--	--	<0.29	--	50	20	1	10,000
2,4,5-Trichlorophenol	<0.60	--	--	--	<0.56	--	--	--	<0.58	--	1000	600	4	10,000
2,4,6-Trichlorophenol	<0.60	--	--	--	<0.56	--	--	--	<0.58	--	20	20	0.7	4,000
Acenaphthene	**0.184**	--	--	--	**0.692**	--	--	--	<0.12	--	1000	1000	4	10,000
Acenaphthylene	**0.485**	--	--	--	**1.09**	--	--	--	<0.12	--	600	10	1	10,000
Acetophenone	<0.60	--	--	--	<0.56	--	--	--	<0.58	--	NE	NE	1000	NE
Aniline	<0.60	--	--	--	<0.56	--	--	--	<0.58	--	NE	NE	1000	NE
Anthracene	**0.529**	--	--	--	**2.3**	--	--	--	<0.12	--	1000	1000	1000	10,000
Benzo(a)anthracene	**2.17**	--	--	--	**7.67**	--	--	--	<0.12	--	7	7	7	3,000
Benzo(a)pyrene	**2.04**	--	--	--	**8.75**	--	--	--	<0.29	--	2	2	2	300
Benzo(b)fluoranthene	**1.74**	--	--	--	**8.03**	--	--	--	<0.12	--	7	7	7	3,000
Benzo(g,h,i)perylene	**1.24**	--	--	--	**5.18**	--	--	--	<0.12	--	1000	1000	1000	10,000
Benzo(k)fluoranthene	**1.74**	--	--	--	**4.56**	--	--	--	<0.12	--	70	70	70	10,000
4-Bromophenyl phenyl ether	<0.30	--	--	--	<0.28	--	--	--	<0.29	--	NE	NE	100	NE
Butyl benzyl phthalate	<0.30	--	--	--	<0.28	--	--	--	<0.29	--	NE	NE	100	NE
2-Chloronaphthalene	<0.30	--	--	--	<0.28	--	--	--	<0.29	--	NE	NE	1000	NE
4-Chloroaniline	<0.60	--	--	--	<0.56	--	--	--	<0.58	--	NE	NE	1	400
Chrysene	**2.16**	--	--	--	**8.43**	--	--	--	<0.12	--	70	70	70	10,000
bis(2-Chloroethoxy)methane	<0.30	--	--	--	<0.28	--	--	--	<0.29	--	NE	NE	500	NE
bis(2-Chloroethyl)ether	<0.30	--	--	--	<0.28	--	--	--	<0.29	--	0.7	2	0.7	800
bis(2-Chloroisopropyl)ether	<0.30	--	--	--	<0.28	--	--	--	<0.29	--	0.7	30	0.7	10,000
1,2-Dichlorobenzene	<0.30	--	--	--	<0.28	--	--	--	<0.29	--	100	30	9	10,000
1,2-Diphenylhydrazine	<0.30	--	--	--	<0.28	--	--	--	<0.29	--	NE	NE	50	NE
1,3-Dichlorobenzene	<0.30	--	--	--	<0.28	--	--	--	<0.29	--	100	100	3	5,000
1,4-Dichlorobenzene	<0.30	--	--	--	<0.28	--	--	--	<0.29	--	1	80	0.7	10,000
2,4-Dinitrotoluene	<0.60	--	--	--	<0.56	--	--	--	<0.58	--	2	2	0.7	800
2,6-Dinitrotoluene	<0.60	--	--	--	<0.56	--	--	--	<0.58	--	NE	NE	100	NE
3,3'-Dichlorobenzidine	<0.60	--	--	--	<0.56	--	--	--	<0.58	--	3	3	3	1,000
Dibenzo(a,h)anthracene	**0.426**	--	--	--	**1.49**	--	--	--	<0.12	--	0.7	0.7	0.7	300
Dibenzofuran	**0.128**	--	--	--	<0.11	--	--	--	<0.12	--	NE	NE	100	NE
Di-n-butyl phthalate	<0.30	--	--	--	<0.28	--	--	--	<0.29	--	NE	NE	50	NE
Di-n-octyl phthalate	<0.30	--	--	--	<0.28	--	--	--	<0.29	--	NE	NE	1000	NE
Diethyl phthalate	<0.30	--	--	--	<0.28	--	--	--	<0.29	--	200	300	10	10,000
Dimethyl phthalate	<0.30	--	--	--	<0.28	--	--	--	<0.29	--	50	600	0.7	10,000
bis(2-Ethylhexyl)phthalate	<0.30	--	--	--	<0.28	--	--	--	<0.29	--	90	90	90	10,000
Fluoranthene	**4.11**	--	--	--	**21.6**	--	--	--	**0.254**	--	1000	1000	1000	10,000
Fluorene	**0.194**	--	--	--	**0.866**	--	--	--	<0.12	--	1000	1000	1000	10,000
Hexachlorobenzene	<0.30	--	--	--	<0.28	--	--	--	<0.29	--	0.7	0.7	0.7	8
Hexachlorobutadiene	<0.30	--	--	--	<0.28	--	--	--	<0.29	--	30	30	30	1,000
Hexachlorocyclopentadiene	<0.60	--	--	--	<0.56	--	--	--	<0.58	--	NE	NE	50	NE
Hexachloroethane	<0.30	--	--	--	<0.28	--	--	--	<0.29	--	3	50	0.7	2,000
Indeno(1,2,3-cd)pyrene	**1.39**	--	--	--	**5.47**	--	--	--	<0.29	--	7	7	7	3,000
Isophorone	<0.30	--	--	--	<0.28	--	--	--	<0.29	--	NE	NE	100	NE
2-Methylnaphthalene	<0.12	--	--	--	**0.329**	--	--	--	<0.12	--	80	300	0.7	5,000
Naphthalene	<0.12	--	--	--	**0.706**	--	--	--	<0.12	--	20	500	4	10,000
Nitrobenzene	<0.30	--	--	--	<0.28	--	--	--	<0.29	--	NE	NE	500	NE
N-Nitroso-di-n-propylamine	<0.30	--	--	--	<0.28	--	--	--	<0.29	--	NE	NE	50	NE
N-Nitrosodiphenylamine	<0.30	--	--	--	<0.28	--	--	--	<0.29	--	NE	NE	100	NE
Phenanthrene	**2.4**	--	--	--	**15.1**	--	--	--	**0.136**	--	500	500	10	10,000
Pyrene	**3.91**	--	--	--	**20**	--	--	--	**0.238**	--	1000	1000	1000	10,000
1,2,4-Trichlorobenzene	<0.30	--	--	--	<0.28	--	--	--	<0.29	--	6	700	2	10,000
TOTAL PETROLEUM HYDROCARBONS - GASOLINE RANGE ORGANICS 8015 (mg/kg)														
TPH-GRO (VOA)	<8.0	--	--	--	<6.9	--	--	--	<7.0	--	NE	NE	NE	NE
PESTICIDES 8081B (mg/kg)														
Aldrin	<0.0062	--	--	--	<0.0056	--	--	--	<0.0058	--	0.08	0.08	0.08	30
alpha-BHC	<0.0062	--	--	--	<0.0056	--	--	--	<0.0058	--	NE	NE	50	NE
beta-BHC	<0.0062	--	--	--	<0.0056	--	--	--	<0.0058	--	NE	NE	10	NE
delta-BHC	<0.0062	--	--	--	<0.0056	--	--	--	<0.0058	--	NE	NE	10	NE
gamma-BHC (Lindane)	<0.0030	--	--	--	<0.0030	--	--	--	<0.0030	--	1	0.5	0.003	600
Chlordane	<0.062	--	--	--	<0.056	--	--	--	<0.058	--	5	5	5	600
Dieldrin	<0.0062	--	--	--	<0.0056	--	--	--	<0.0058	--	0.08	0.08	0.08	30
4,4'-DDD	<0.0062	--	--	--	<0.0056	--	--	--	<0.0058	--	8	8	8	600
4,4'-DDE	<0.0062	--	--	--	<0.0056	--	--	--	<0.0058	--	6	6	6	600
4,4'-DDT	<0.0062	--	--	--	**0.0449**	--	--	--	<0.0058	--	6	6	6	600
Endrin	<0.0062	--	--	--	<0.0056	--	--	--	<0.0058	--	10	10	10	200
Endosulfan sulfate	<0.0062	--	--	--	<0.0056	--	--	--	<0.0058	--	NE	NE	NE	NE
Endosulfan-I	<0.0062	--	--	--	<0.0056	--	--	--	<0.0058	--	300	1	0.5	5,000
Endosulfan-II	<0.0062	--	--	--	<0.0056	--	--	--	<0.0058	--	300	1	0.5	5,000
Heptachlor	<0.0062	--	--	--	<0.0056	--	--	--	<0.0058	--	0.3	0.3	0.3	100
Heptachlor epoxide	<0.0062	--	--	--	<0.0056	--	--	--	<0.0058	--	0.1	0.1	0.1	10
Hexachlorobenzene	<0.0062	--	--	--	<0.0056	--	--	--	<0.0058	--	0.7	0.7	0.7	8
Methoxychlor	<0.0062	--	--	--	<0.0056	--	--	--	<0.0058	--	200	200	200	4,000
Endrin ketone	<0.0062	--	--	--	<0.0056	--	--	--	<0.0058	--	NE	NE	NE	NE
POLYCHLORINATED BIPHENYLS 8082A (mg/kg)														
Aroclor 1016	<0.031	--	--	--	<0.028	--	--	--	<0.029	--	1	1	1	100
Aroclor 1221	<0.031	--	--	--	<0.028	--	--	--	<0.029	--	1	1	1	100
Aroclor 1232	<0.031	--	--	--	<0.028	--	--	--	<0.029	--	1	1	1	100
Aroclor 1242	<0.031	--	--	--	<0.028	--	--	--	<0.029	--	1	1	1	100
Aroclor 1248	<0.031	--	--	--	<0.028	--	--	--	<0.029	--	1	1	1	100
Aroclor 1254	<0.031	--	--	--	<0.028	--	--	--	<0.029	--	1	1	1	100
Aroclor 1260	<0.031	--	--	--	<0.028	--	--	--	<0.029	--	1	1	1	100
Aroclor 1262	<0.031	--	--	--	<0.028	--	--	--	<0.029	--	1	1	1	100
Aroclor 1268	<0.031	--	--	--	<0.028	--	--	--	<0.029	--	1	1	1	100
HERBICIDES 8151 (mg/kg)														
2,4-D	<0.020			-	<0.018	-	-	-	<0.020	-	NE	NE	NE	NE
2,4,5-TP (Silvex)	<0.0039	-	-	-	<0.0036	-	-	-	<0.0039	-	NE	NE	NE	NE
2,4,5-T	<0.0039	-	-	-	<0.0036	-	-	-	<0.0039	-	NE	NE	NE	NE
TOTAL PETROLEUM HYDROCARBONS - DIESEL RANGE ORGANICS 8015 (mg/kg)														
TPH-DRO (Semi-VOA)	**58.4**	-	-	-	**423**	-	-	-	ND (19)	-	NE	NE	NE	NE
TOTAL METALS (mg/kg)														
Antimony	--	--	--	--	--	--	--	--	--	--	20	20	20	300
Arsenic	**12.4**	-	-	-	**4.3**	-	-	-	**9.2**	-	20	20	20	500
Barium	**103**	-	-	-	**58**	-	-	-	**56.2**	-	1,000	1,000	1000	10,000
Beryllium	-	-	-	-	-	-	-	-	-	-	90	90	90	2,000
Cadmium	<0.64	-	-	-	<0.59	-	-	-	<0.60	-	70	70	70	1,000
Chromium	**40.6**	-	-	-	**17.7**	-	-	-	23	-	100	100	100	2,000
Lead	**56.6**	**128**	**16.9**	**13.2**	**24.2**	**67.4**	**10**	**2.5**	**40.7**	**156**	200	200	200	6,000
Mercury	**0.51**	-	-	-	<0.036	-	-	-	**0.099**	-	20	20	20	300
Nickel	-	-	-	-	-	-	-	-	-	-	600	600	20	10,000
Selenium	<2.6	-	-	-	<2.4	-	-	-	<2.4	-	400	400	400	7,000
Silver	<0.64	-	-	-	<0.59	-	-	-	**2.5**	-	100	100	100	2,000
Thallium	-	-	-	-	-	-	-	-	-	-	8	8	8	800
Vanadium	-	-	-	-	-	-	-	-	-	-	400	400	400	7,000
Zinc	-	-	-	-	-	-	-	-	-	-	1,000	1,000	1000	10,000

NOTES:

-- is analysis not performed	mg/kg is milligrams per kilogram.	SVOC is semi-volatile organic compound
NE is not established.	mg/L is milligrams per liter.	<2.0 indicates not detected at or above the laboratory reporting limit of 2.0 mg/kg
ND is not detected	PID is photoionization detector.	Analytes detected above the method reporting limit are in **Bold**
su is standard units	ppmv is parts per million by volume	Analytes detected above MCP Reportable Concentrations are in Red

TABLE 8

SUMMARY OF SOIL ANALYTICAL DATA (BUILDING FOOTPRINT) - ALL OTHER ANALYSES

Maggiore Somerville
343-351 Summer Street
Somerville, Massachusetts

Sample Date	March 28, 2017										MCP Method 1 Soil Standards (mg/kg)		MCP Reportable Concentrations (mg/kg)	MCP Method 3 Upper Concentration Limits (mg/kg)
Sample ID	PC-7 10-15'	PC-7 5-10'	PC-8 0-15'	PC-8 0-5'	PC-8 10-15'	PC-8 5-10'	PC-9 0-15'	PC-9 0-5'	PC-9 10-15'	PC-9 5-10'	S-1			
Depth (feet)	10-15	5-10	0-15	0-5	10-15	5-10	0-15	0-5	10-15	5-10	GW-2	GW-3	RCS-1	
PID (ppmv)	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL				
SEMI-VOLATILE ORGANIC COMPOUNDS 8270D (mg/kg)														
Benzoic acid	--	--	<0.56	--	--	--	<0.59	--	--	--	NE	NE	1000	NE
2-Chlorophenol	--	--	<0.28	--	--	--	<0.29	--	--	--	100	100	0.7	3,000
4-Chloro-3-methyl phenol	--	--	<0.56	--	--	--	<0.59	--	--	--	NE	NE	1000	NE
2,4-Dichlorophenol	--	--	<0.56	--	--	--	<0.59	--	--	--	60	40	0.7	8,000
2,4-Dimethylphenol	--	--	<0.56	--	--	--	<0.59	--	--	--	100	500	0.7	10,000
2,4-Dinitrophenol	--	--	<0.56	--	--	--	<0.59	--	--	--	50	50	3	8,000
2-Methylphenol	--	--	<0.56	--	--	--	<0.59	--	--	--	NE	NE	500	NE
3&4-Methylphenol	--	--	<0.56	--	--	--	<0.59	--	--	--	NE	NE	500	NE
2-Nitrophenol	--	--	<0.56	--	--	--	<0.59	--	--	--	NE	NE	100	NE
4-Nitrophenol	--	--	<0.56	--	--	--	<0.59	--	--	--	NE	NE	100	NE
Pentachlorophenol	--	--	<0.56	--	--	--	<0.59	--	--	--	3	3	3	700
Phenol	--	--	<0.28	--	--	--	<0.29	--	--	--	50	20	1	10,000
2,4,5-Trichlorophenol	--	--	<0.56	--	--	--	<0.59	--	--	--	1000	600	4	10,000
2,4,6-Trichlorophenol	--	--	<0.56	--	--	--	<0.59	--	--	--	20	20	0.7	4,000
Acenaphthene	--	--	**0.213**	--	--	--	<0.12	--	--	--	1000	1000	4	10,000
Acenaphthylene	--	--	<0.11	--	--	--	<0.12	--	--	--	600	10	1	10,000
Acetophenone	--	--	<0.56	--	--	--	<0.59	--	--	--	NE	NE	1000	NE
Aniline	--	--	<0.56	--	--	--	<0.59	--	--	--	NE	NE	1000	NE
Anthracene	--	--	**0.49**	--	--	--	**0.122**	--	--	--	1000	1000	1000	10,000
Benzo(a)anthracene	--	--	**1.32**	--	--	--	**0.413**	--	--	--	7	7	7	3,000
Benzo(a)pyrene	--	--	**1.27**	--	--	--	**0.43**	--	--	--	2	2	2	300
Benzo(b)fluoranthene	--	--	0.981	--	--	--	**0.368**	--	--	--	7	7	7	3,000
Benzo(g,h,i)perylene	--	--	**0.7**	--	--	--	**0.303**	--	--	--	1000	1000	1000	10,000
Benzo(k)fluoranthene	--	--	**0.979**	--	--	--	**0.355**	--	--	--	70	70	70	10,000
4-Bromophenyl phenyl ether	--	--	<0.28	--	--	--	<0.29	--	--	--	NE	NE	100	NE
Butyl benzyl phthalate	--	--	<0.28	--	--	--	<0.29	--	--	--	NE	NE	100	NE
2-Chloronaphthalene	--	--	<0.28	--	--	--	<0.29	--	--	--	NE	NE	1000	NE
4-Chloroaniline	--	--	<0.56	--	--	--	<0.59	--	--	--	NE	NE	1	400
Chrysene	--	--	**1.22**	--	--	--	**0.398**	--	--	--	70	70	70	10,000
bis(2-Chloroethoxy)methane	--	--	<0.28	--	--	--	<0.29	--	--	--	NE	NE	500	NE
bis(2-Chloroethyl)ether	--	--	<0.28	--	--	--	<0.29	--	--	--	0.7	2	0.7	800
bis(2-Chloroisopropyl)ether	--	--	<0.28	--	--	--	<0.29	--	--	--	0.7	30	0.7	10,000
1,2-Dichlorobenzene	--	--	<0.28	--	--	--	<0.29	--	--	--	100	30	9	10,000
1,2-Diphenylhydrazine	--	--	<0.28	--	--	--	<0.29	--	--	--	NE	NE	50	NE
1,3-Dichlorobenzene	--	--	<0.28	--	--	--	<0.29	--	--	--	100	100	3	5,000
1,4-Dichlorobenzene	--	--	<0.28	--	--	--	<0.29	--	--	--	1	80	0.7	10,000
2,4-Dinitrotoluene	--	--	<0.56	--	--	--	<0.59	--	--	--	2	2	0.7	800
2,6-Dinitrotoluene	--	--	<0.56	--	--	--	<0.59	--	--	--	NE	NE	100	NE
3,3'-Dichlorobenzidine	--	--	<0.56	--	--	--	<0.59	--	--	--	3	3	3	1,000
Dibenzo(a,h)anthracene	--	--	**0.235**	--	--	--	<0.12	--	--	--	0.7	0.7	0.7	300
Dibenzofuran	--	--	**0.113**	--	--	--	<0.12	--	--	--	NE	NE	100	NE
Di-n-butyl phthalate	--	--	<0.28	--	--	--	<0.29	--	--	--	NE	NE	50	NE
Di-n-octyl phthalate	--	--	<0.28	--	--	--	<0.29	--	--	--	NE	NE	1000	NE
Diethyl phthalate	--	--	<0.28	--	--	--	<0.29	--	--	--	200	300	10	10,000
Dimethyl phthalate	--	--	<0.28	--	--	--	<0.29	--	--	--	50	600	0.7	10,000
bis(2-Ethylhexyl)phthalate	--	--	<0.28	--	--	--	<0.29	--	--	--	90	90	90	10,000
Fluoranthene	--	--	**2.94**	--	--	--	**0.712**	--	--	--	1000	1000	1000	10,000
Fluorene	--	--	**0.158**	--	--	--	<0.12	--	--	--	1000	1000	1000	10,000
Hexachlorobenzene	--	--	<0.28	--	--	--	<0.29	--	--	--	0.7	0.7	0.7	8
Hexachlorobutadiene	--	--	<0.28	--	--	--	<0.29	--	--	--	30	30	30	1,000
Hexachlorocyclopentadiene	--	--	<0.56	--	--	--	<0.59	--	--	--	NE	NE	50	NE
Hexachloroethane	--	--	<0.28	--	--	--	<0.29	--	--	--	3	50	0.7	2,000
Indeno(1,2,3-cd)pyrene	--	--	**0.812**	--	--	--	**0.309**	--	--	--	7	7	7	3,000
Isophorone	--	--	<0.28	--	--	--	<0.29	--	--	--	NE	NE	100	NE
2-Methylnaphthalene	--	--	<0.11	--	--	--	<0.12	--	--	--	80	300	0.7	5,000
Naphthalene	--	--	<0.11	--	--	--	<0.12	--	--	--	20	500	4	10,000
Nitrobenzene	--	--	<0.28	--	--	--	<0.29	--	--	--	NE	NE	500	NE
N-Nitroso-di-n-propylamine	--	--	<0.28	--	--	--	<0.29	--	--	--	NE	NE	50	NE
N-Nitrosodiphenylamine	--	--	<0.28	--	--	--	<0.29	--	--	--	NE	NE	100	NE
Phenanthrene	--	--	**2.29**	--	--	--	**0.388**	--	--	--	500	500	10	10,000
Pyrene	--	--	**2.74**	--	--	--	**0.725**	--	--	--	1000	1000	1000	10,000
1,2,4-Trichlorobenzene	--	--	<0.28	--	--	--	<0.29	--	--	--	6	700	2	10,000
TOTAL PETROLEUM HYDROCARBONS - GASOLINE RANGE ORGANICS 8015 (mg/kg)														
TPH-GRO (VOA)	--	--	<6.7	--	--	--	<7.4	--	--	--	NE	NE	NE	NE
PESTICIDES 8081B (mg/kg)														
Aldrin	--	--	<0.0057	--	--	--	<0.0058	--	--	--	0.08	0.08	0.08	30
alpha-BHC	--	--	<0.0057	--	--	--	<0.0058	--	--	--	NE	NE	50	NE
beta-BHC	--	--	<0.0057	--	--	--	<0.0058	--	--	--	NE	NE	10	NE
delta-BHC	--	--	<0.0057	--	--	--	<0.0058	--	--	--	NE	NE	10	NE
gamma-BHC (Lindane)	--	--	<0.0030	--	--	--	<0.0030	--	--	--	1	0.5	0.003	600
Chlordane	--	--	<0.057	--	--	--	<0.058	--	--	--	5	5	5	600
Dieldrin	--	--	<0.0057	--	--	--	<0.0058	--	--	--	0.08	0.08	0.08	30
4,4'-DDD	--	--	<0.0057	--	--	--	<0.0058	--	--	--	8	8	8	600
4,4'-DDE	--	--	<0.0057	--	--	--	<0.0058	--	--	--	6	6	6	600
4,4'-DDT	--	--	**0.0067**	--	--	--	<0.0058	--	--	--	6	6	6	600
Endrin	--	--	<0.0057	--	--	--	<0.0058	--	--	--	10	10	10	200
Endosulfan sulfate	--	--	<0.0057	--	--	--	<0.0058	--	--	--	NE	NE	NE	NE
Endosulfan-I	--	--	<0.0057	--	--	--	<0.0058	--	--	--	300	1	0.5	5,000
Endosulfan-II	--	--	<0.0057	--	--	--	<0.0058	--	--	--	300	1	0.5	5,000
Heptachlor	--	--	<0.0057	--	--	--	<0.0058	--	--	--	0.3	0.3	0.3	100
Heptachlor epoxide	--	--	<0.0057	--	--	--	<0.0058	--	--	--	0.1	0.1	0.1	10
Hexachlorobenzene	--	--	<0.0057	--	--	--	<0.0058	--	--	--	0.7	0.7	0.7	8
Methoxychlor	--	--	<0.0057	--	--	--	<0.0058	--	--	--	200	200	200	4,000
Endrin ketone	--	--	<0.0057	--	--	--	<0.0058	--	--	--	NE	NE	NE	NE
POLYCHLORINATED BIPHENYLS 8082A (mg/kg)														
Aroclor 1016	--	--	<0.028	--	--	--	<0.029	--	--	--	1	1	1	100
Aroclor 1221	--	--	<0.028	--	--	--	<0.029	--	--	--	1	1	1	100
Aroclor 1232	--	--	<0.028	--	--	--	<0.029	--	--	--	1	1	1	100
Aroclor 1242	--	--	<0.028	--	--	--	<0.029	--	--	--	1	1	1	100
Aroclor 1248	--	--	<0.028	--	--	--	<0.029	--	--	--	1	1	1	100
Aroclor 1254	--	--	<0.028	--	--	--	<0.029	--	--	--	1	1	1	100
Aroclor 1260	--	--	<0.028	--	--	--	<0.029	--	--	--	1	1	1	100
Aroclor 1262	--	--	<0.028	--	--	--	<0.029	--	--	--	1	1	1	100
Aroclor 1268	--	--	<0.028	--	--	--	<0.029	--	--	--	1	1	1	100
HERBICIDES 8151 (mg/kg)														
2,4-D	-	-	<0.017	-	-	-	<0.018	-	-	-	NE	NE	NE	NE
2,4,5-TP (Silvex)	-	-	<0.0034	-	-	-	<0.0036	-	-	-	NE	NE	NE	NE
2,4,5-T	-	-	<0.0034	-	-	-	<0.0036	-	-	-	NE	NE	NE	NE
TOTAL PETROLEUM HYDROCARBONS - DIESEL RANGE ORGANICS 8015 (mg/kg)														
TPH-DRO (Semi-VOA)	-	-	**18.8**	-	-	-	**39.3**	-	-	-	NE	NE	NE	NE
TOTAL METALS (mg/kg)														
Antimony	--	--	--	--	--	--	--	--	--	--	20	20	20	300
Arsenic	-	-	**9**	-	-	-	**14.4**	-	-	-	20	20	20	500
Barium	-	-	**51.5**	-	-	-	**86.8**	-	-	-	1,000	1,000	1000	10,000
Beryllium	-	-	-	-	-	-	-	-	-	-	90	90	90	2,000
Cadmium	-	-	<0.55	-	-	-	<0.61	-	-	-	70	70	70	1,000
Chromium	-	-	**23.4**	-	-	-	**28.9**	-	-	-	100	100	100	2,000
Lead	**5.7**	**4.2**	**40.2**	**104**	**12.9**	**2.9**	**31.6**	**26.2**	**11.5**	**28.2**	200	200	200	6,000
Mercury	-	-	**0.14**	-	-	-	**3.3**	-	-	-	20	20	20	300
Nickel	-	-	-	-	-	-	-	-	-	-	600	600	20	10,000
Selenium	-	-	<2.2	-	-	-	<2.4	-	-	-	400	400	400	7,000
Silver	-	-	**2.4**	-	-	-	**2.6**	-	-	-	100	100	100	2,000
Thallium	-	-	-	-	-	-	-	-	-	-	8	8	8	800
Vanadium	-	-	-	-	-	-	-	-	-	-	400	400	400	7,000
Zinc	-	-	-	-	-	-	-	-	-	-	1,000	1,000	1000	10,000

NOTES:

-- is analysis not performed.
NE is not established.
ND is not detected
su is standard units.

mg/kg is milligrams per kilogram.
mg/L is milligrams per liter
PID is photoionization detector.
ppmv is parts per million by volume.

SVOC is semi-volatile organic compound
<2.0 indicates not detected at or above the laboratory reporting limit of 2.0 mg/kg
Analytes detected above the method reporting limit are in **Bold**
Analytes detected above MCP Reportable Concentrations are in Red

TABLE 8

SUMMARY OF SOIL ANALYTICAL DATA (BUILDING FOOTPRINT) - ALL OTHER ANALYSES

Maggiore Somerville
343-351 Summer Street
Somerville, Massachusetts

Sample Date	March 28, 2017									**MCP Method 1 Soil Standards (mg/kg)**		**MCP Reportable Concentrations (mg/kg)**	**MCP Method 3 Upper Concentration Limits (mg/kg)**
Sample ID	PC-10 0-15'	PC-10 0-5'	PC-10 10-15'	PC-10 5-10'	PC-11 0-15' COMP	PC-11 0-5'	PC-11 10-15'	PC-11 5-10'	PC-12 0-15'	S-1		RCS-1	
Depth (feet)	0-15	0-5	10-15	5-10	0-15	0-5	10-15	5-10	0-15	GW-2	GW-3		
PID (ppmv)	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL				
SEMI-VOLATILE ORGANIC COMPOUNDS 8270D (mg/kg)													
Benzoic acid	<0.60	--	--	--	<0.57	--	--	--	<0.57	NE	NE	1000	NE
2-Chlorophenol	<0.30	--	--	--	<0.29	--	--	--	<0.29	100	100	0.7	3,000
4-Chloro-3-methyl phenol	<0.60	--	--	--	<0.57	--	--	--	<0.57	NE	NE	1000	NE
2,4-Dichlorophenol	<0.60	--	--	--	<0.57	--	--	--	<0.57	60	40	0.7	8,000
2,4-Dimethylphenol	<0.60	--	--	--	<0.57	--	--	--	<0.57	100	500	0.7	10,000
2,4-Dinitrophenol	<0.60	--	--	--	<0.57	--	--	--	<0.57	50	50	3	8,000
2-Methylphenol	<0.60	--	--	--	<0.57	--	--	--	<0.57	NE	NE	500	NE
3&4-Methylphenol	<0.60	--	--	--	<0.57	--	--	--	<0.57	NE	NE	500	NE
2-Nitrophenol	<0.60	--	--	--	<0.57	--	--	--	<0.57	NE	NE	100	NE
4-Nitrophenol	<0.60	--	--	--	<0.57	--	--	--	<0.57	NE	NE	100	NE
Pentachlorophenol	<0.60	--	--	--	<0.57	--	--	--	<0.57	3	3	3	700
Phenol	<0.30	--	--	--	<0.29	--	--	--	<0.29	50	20	1	10,000
2,4,5-Trichlorophenol	<0.60	--	--	--	<0.57	--	--	--	<0.57	1000	600	4	10,000
2,4,6-Trichlorophenol	<0.60	--	--	--	<0.57	--	--	--	<0.57	20	20	0.7	4,000
Acenaphthene	<0.12	--	--	--	<0.11	--	--	--	<0.11	1000	1000	4	10,000
Acenaphthylene	**0.401**	--	--	--	<0.11	--	--	--	<0.11	600	10	1	10,000
Acetophenone	<0.60	--	--	--	<0.57	--	--	--	<0.57	NE	NE	1000	NE
Aniline	<0.60	--	--	--	<0.57	--	--	--	<0.57	NE	NE	1000	NE
Anthracene	**0.369**	--	--	--	<0.11	--	--	--	<0.11	1000	1000	1000	10,000
Benzo(a)anthracene	**1.29**	--	--	--	**0.123**	--	--	--	<0.11	7	7	7	3,000
Benzo(a)pyrene	**1.31**	--	--	--	<0.29	--	--	--	<0.29	2	2	2	300
Benzo(b)fluoranthene	**0.999**	--	--	--	<0.11	--	--	--	<0.11	7	7	7	3,000
Benzo(g,h,i)perylene	**0.788**	--	--	--	<0.11	--	--	--	<0.11	1000	1000	1000	10,000
Benzo(k)fluoranthene	**1.08**	--	--	--	**0.117**	--	--	--	<0.11	70	70	70	10,000
4-Bromophenyl phenyl ether	<0.30	--	--	--	<0.29	--	--	--	<0.29	NE	NE	100	NE
Butyl benzyl phthalate	<0.30	--	--	--	<0.29	--	--	--	<0.29	NE	NE	100	NE
2-Chloronaphthalene	<0.30	--	--	--	<0.29	--	--	--	<0.29	NE	NE	1000	NE
4-Chloroaniline	<0.60	--	--	--	<0.57	--	--	--	<0.57	NE	NE	1	400
Chrysene	**1.18**	--	--	--	**0.118**	--	--	--	**0.115**	70	70	70	10,000
bis(2-Chloroethoxy)methane	<0.30	--	--	--	<0.29	--	--	--	<0.29	NE	NE	500	NE
bis(2-Chloroethyl)ether	<0.30	--	--	--	<0.29	--	--	--	<0.29	0.7	2	0.7	800
bis(2-Chloroisopropyl)ether	<0.30	--	--	--	<0.29	--	--	--	<0.29	0.7	30	0.7	10,000
1,2-Dichlorobenzene	<0.30	--	--	--	<0.29	--	--	--	<0.29	100	30	9	10,000
1,2-Diphenylhydrazine	<0.30	--	--	--	<0.29	--	--	--	<0.29	NE	NE	50	NE
1,3-Dichlorobenzene	<0.30	--	--	--	<0.29	--	--	--	<0.29	100	100	3	5,000
1,4-Dichlorobenzene	<0.30	--	--	--	<0.29	--	--	--	<0.29	1	80	0.7	10,000
2,4-Dinitrotoluene	<0.60	--	--	--	<0.57	--	--	--	<0.57	2	2	0.7	800
2,6-Dinitrotoluene	<0.60	--	--	--	<0.57	--	--	--	<0.57	NE	NE	100	NE
3,3'-Dichlorobenzidine	<0.60	--	--	--	<0.57	--	--	--	<0.57	3	3	3	1,000
Dibenzo(a,h)anthracene	**0.255**	--	--	--	<0.11	--	--	--	<0.11	0.7	0.7	0.7	300
Dibenzofuran	<0.12	--	--	--	<0.11	--	--	--	<0.11	NE	NE	100	NE
Di-n-butyl phthalate	<0.30	--	--	--	<0.29	--	--	--	<0.29	NE	NE	50	NE
Di-n-octyl phthalate	<0.30	--	--	--	<0.29	--	--	--	<0.29	NE	NE	1000	NE
Diethyl phthalate	<0.30	--	--	--	<0.29	--	--	--	<0.29	200	300	10	10,000
Dimethyl phthalate	<0.30	--	--	--	<0.29	--	--	--	<0.29	50	600	0.7	10,000
bis(2-Ethylhexyl)phthalate	<0.30	--	--	--	<0.29	--	--	--	<0.29	90	90	90	10,000
Fluoranthene	**2.21**	--	--	--	**0.115**	--	--	--	**0.222**	1000	1000	1000	10,000
Fluorene	**0.142**	--	--	--	<0.11	--	--	--	<0.11	1000	1000	1000	10,000
Hexachlorobenzene	<0.30	--	--	--	<0.29	--	--	--	<0.29	0.7	0.7	0.7	8
Hexachlorobutadiene	<0.30	--	--	--	<0.29	--	--	--	<0.29	30	30	30	1,000
Hexachlorocyclopentadiene	<0.60	--	--	--	<0.57	--	--	--	<0.57	NE	NE	50	NE
Hexachloroethane	<0.30	--	--	--	<0.29	--	--	--	<0.29	3	50	0.7	2,000
Indeno(1,2,3-cd)pyrene	**0.881**	--	--	--	<0.29	--	--	--	<0.29	7	7	7	3,000
Isophorone	<0.30	--	--	--	<0.29	--	--	--	<0.29	NE	NE	100	NE
2-Methylnaphthalene	<0.12	--	--	--	<0.11	--	--	--	<0.11	80	300	0.7	5,000
Naphthalene	<0.12	--	--	--	<0.11	--	--	--	<0.11	20	500	4	10,000
Nitrobenzene	<0.30	--	--	--	<0.29	--	--	--	<0.29	NE	NE	500	NE
N-Nitroso-di-n-propylamine	<0.30	--	--	--	<0.29	--	--	--	<0.29	NE	NE	50	NE
N-Nitrosodiphenylamine	<0.30	--	--	--	<0.29	--	--	--	<0.29	NE	NE	100	NE
Phenanthrene	**1.12**	--	--	--	<0.11	--	--	--	**0.127**	500	500	10	10,000
Pyrene	**1.99**	--	--	--	**0.123**	--	--	--	**0.209**	1000	1000	1000	10,000
1,2,4-Trichlorobenzene	<0.30	--	--	--	<0.29	--	--	--	<0.29	6	700	2	10,000
TOTAL PETROLEUM HYDROCARBONS - GASOLINE RANGE ORGANICS 8015 (mg/kg)													
TPH-GRO (VOA)	<6.9	--	--	--	<6.5	--	--	--	<7.0	NE	NE	NE	NE
PESTICIDES 8081B (mg/kg)													
Aldrin	<0.0057	--	--	--	<0.0057	--	--	--	<0.0059	0.08	0.08	0.08	30
alpha-BHC	<0.0057	--	--	--	<0.0057	--	--	--	<0.0059	NE	NE	50	NE
beta-BHC	<0.0057	--	--	--	<0.0057	--	--	--	<0.0059	NE	NE	10	NE
delta-BHC	<0.0057	--	--	--	<0.0057	--	--	--	<0.0059	NE	NE	10	NE
gamma-BHC (Lindane)	<0.0030	--	--	--	<0.0030	--	--	--	<0.0030	1	0.5	0.003	600
Chlordane	<0.057	--	--	--	<0.057	--	--	--	<0.059	5	5	5	600
Dieldrin	<0.0057	--	--	--	<0.0057	--	--	--	<0.0059	0.08	0.08	0.08	30
4,4'-DDD	<0.0057	--	--	--	<0.0057	--	--	--	<0.0059	8	8	8	600
4,4'-DDE	<0.0057	--	--	--	<0.0057	--	--	--	<0.0059	6	6	6	600
4,4'-DDT	<0.0057	--	--	--	<0.0057	--	--	--	<0.0059	6	6	6	600
Endrin	<0.0057	--	--	--	<0.0057	--	--	--	<0.0059	10	10	10	200
Endosulfan sulfate	<0.0057	--	--	--	<0.0057	--	--	--	<0.0059	NE	NE	NE	NE
Endosulfan-I	<0.0057	--	--	--	<0.0057	--	--	--	<0.0059	300	1	0.5	5,000
Endosulfan-II	<0.0057	--	--	--	<0.0057	--	--	--	<0.0059	300	1	0.5	5,000
Heptachlor	<0.0057	--	--	--	<0.0057	--	--	--	<0.0059	0.3	0.3	0.3	100
Heptachlor epoxide	<0.0057	--	--	--	<0.0057	--	--	--	<0.0059	0.1	0.1	0.1	10
Hexachlorobenzene	<0.0057	--	--	--	<0.0057	--	--	--	<0.0059	0.7	0.7	0.7	8
Methoxychlor	<0.0057	--	--	--	<0.0057	--	--	--	<0.0059	200	200	200	4,000
Endrin ketone	<0.0057	--	--	--	<0.0057	--	--	--	<0.0059	NE	NE	NE	NE
POLYCHLORINATED BIPHENYLS 8082A (mg/kg)													
Aroclor 1016	<0.029	--	--	--	<0.028	--	--	--	<0.030	1	1	1	100
Aroclor 1221	<0.029	--	--	--	<0.028	--	--	--	<0.030	1	1	1	100
Aroclor 1232	<0.029	--	--	--	<0.028	--	--	--	<0.030	1	1	1	100
Aroclor 1242	<0.029	--	--	--	<0.028	--	--	--	<0.030	1	1	1	100
Aroclor 1248	<0.029	--	--	--	<0.028	--	--	--	<0.030	1	1	1	100
Aroclor 1254	<0.029	--	--	--	<0.028	--	--	--	<0.030	1	1	1	100
Aroclor 1260	<0.029	--	--	--	<0.028	--	--	--	<0.030	1	1	1	100
Aroclor 1262	<0.029	--	--	--	<0.028	--	--	--	<0.030	1	1	1	100
Aroclor 1268	<0.029	--	--	--	<0.028	--	--	--	<0.030	1	1	1	100
HERBICIDES 8151 (mg/kg)													
2,4-D	<0.018	-	-	-	<0.017	-	-	-	<0.020	NE	NE	NE	NE
2,4,5-TP (Silvex)	<0.0036	-	-	-	<0.0034	-	-	-	<0.0040	NE	NE	NE	NE
2,4,5-T	<0.0036	-	-	-	<0.0034	-	-	-	<0.0040	NE	NE	NE	NE
TOTAL PETROLEUM HYDROCARBONS - DIESEL RANGE ORGANICS 8015 (mg/kg)													
TPH-DRO (Semi-VOA)	**52.2**	-	-	-	**36.3**	-	-	-	**50**	NE	NE	NE	NE
TOTAL METALS (mg/kg)													
Antimony	--	--	--	--	--	--	--	--	--	20	20	20	300
Arsenic	**11.3**	-	-	-	**3.2**	-	-	-	**7.2**	20	20	20	500
Barium	**105**	-	-	-	**28.1**	-	-	-	**61.7**	1,000	1,000	1000	10,000
Beryllium	-	-	-	-	-	-	-	-	-	90	90	90	2,000
Cadmium	<0.58	-	-	-	<0.58	-	-	-	**0.77**	70	70	70	1,000
Chromium	**45.5**	-	-	-	**12.9**	-	-	-	**13.9**	100	100	100	2,000
Lead	**19**	**28.60**	**12.2**	**8.7**	**17.9**	**15.4**	**7.4**	**10.5**	**238**	200	200	200	6,000
Mercury	**0.084**	-	-	-	**0.045**	-	-	-	**0.17**	20	20	20	300
Nickel	-	-	-	-	-	-	-	-	-	600	600	20	10,000
Selenium	<2.3	-	-	-	<2.3	-	-	-	<2.3	400	400	400	7,000
Silver	**2.7**	-	-	-	<0.58	-	-	-	<0.57	100	100	100	2,000
Thallium	-	-	-	-	-	-	-	-	-	8	8	8	800
Vanadium	-	-	-	-	-	-	-	-	-	400	400	400	7,000
Zinc	-	-	-	-	-	-	-	-	-	1,000	1,000	1000	10,000

NOTES:

-- is analysis not performed.
NE is not established
ND is not detected
su is standard units.

mg/kg is milligrams per kilogram.
mg/L is milligrams per liter
PID is photoionization detector
ppmv is parts per million by volume.

SVOC is semi-volatile organic compound.
<2.0 indicates not detected at or above the laboratory reporting limit of 2.0 mg/kg.
Analytes detected above the method reporting limit are in **Bold**.
Analytes detected above MCP Reportable Concentrations are in **Red**

TABLE 8

SUMMARY OF SOIL ANALYTICAL DATA (BUILDING FOOTPRINT) - ALL OTHER ANALYSES

Maggiore Somerville
343-351 Summer Street
Somerville, Massachusetts

Sample Date	March 28, 2017									MCP Method 1 Soil Standards (mg/kg)		MCP Reportable Concentrations (mg/kg)	MCP Method 3 Upper Concentration Limits (mg/kg)
Sample ID	PC-12 0-5'	PC-12 10-15'	PC-12 5-10'	PC-13 0-15 'COMP	PC-13 0-5'	PC-13 10-15'	PC-13 5-10'	PC-14 0-15' COMP	PC-14 0-5'	S-1			
Depth (feet)	0-5	10-15	5-10	0-15	0-5	10-15	5-10	0-15	0-5				
PID (ppmv)	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	GW-2	GW-3	RCS-1	
SEMI-VOLATILE ORGANIC COMPOUNDS 8270D (mg/kg)													
Benzoic acid	--	--	--	<0.59	--	--	--	<0.57	--	NE	NE	1000	NE
2-Chlorophenol	--	--	--	<0.29	--	--	--	<0.28	--	100	100	0.7	3,000
4-Chloro-3-methyl phenol	--	--	--	<0.59	--	--	--	<0.57	--	NE	NE	1000	NE
2,4-Dichlorophenol	--	--	--	<0.59	--	--	--	<0.57	--	60	40	0.7	8,000
2,4-Dimethylphenol	--	--	--	<0.59	--	--	--	<0.57	--	100	500	0.7	10,000
2,4-Dinitrophenol	--	--	--	<0.59	--	--	--	<0.57	--	50	50	3	8,000
2-Methylphenol	--	--	--	<0.59	--	--	--	<0.57	--	NE	NE	500	NE
3&4-Methylphenol	--	--	--	<0.59	--	--	--	<0.57	--	NE	NE	500	NE
2-Nitrophenol	--	--	--	<0.59	--	--	--	<0.57	--	NE	NE	100	NE
4-Nitrophenol	--	--	--	<0.59	--	--	--	<0.57	--	NE	NE	100	NE
Pentachlorophenol	--	--	--	<0.59	--	--	--	<0.57	--	3	3	3	700
Phenol	--	--	--	<0.29	--	--	--	<0.28	--	50	20	1	10,000
2,4,5-Trichlorophenol	--	--	--	<0.59	--	--	--	<0.57	--	1000	600	4	10,000
2,4,6-Trichlorophenol	--	--	--	<0.59	--	--	--	<0.57	--	20	20	0.7	4,000
Acenaphthene	--	--	--	<0.12	--	--	--	<0.11	--	1000	1000	4	10,000
Acenaphthylene	--	--	--	<0.12	--	--	--	<0.11	--	600	10	1	10,000
Acetophenone	--	--	--	<0.59	--	--	--	<0.57	--	NE	NE	1000	NE
Aniline	--	--	--	<0.59	--	--	--	<0.57	--	NE	NE	1000	NE
Anthracene	--	--	--	**0.133**	--	--	--	**0.154**	--	1000	1000	1000	10,000
Benzo(a)anthracene	--	--	--	**0.512**	--	--	--	**0.384**	--	7	7	7	3,000
Benzo(a)pyrene	--	--	--	**0.539**	--	--	--	**0.384**	--	2	2	2	300
Benzo(b)fluoranthene	--	--	--	**0.413**	--	--	--	**0.283**	--	7	7	7	3,000
Benzo(g,h,i)perylene	--	--	--	**0.304**	--	--	--	**0.217**	--	1000	1000	1000	10,000
Benzo(k)fluoranthene	--	--	--	**0.416**	--	--	--	**0.291**	--	70	70	70	10,000
4-Bromophenyl phenyl ether	--	--	--	<0.29	--	--	--	<0.28	--	NE	NE	100	NE
Butyl benzyl phthalate	--	--	--	<0.29	--	--	--	<0.28	--	NE	NE	100	NE
2-Chloronaphthalene	--	--	--	<0.29	--	--	--	<0.28	--	NE	NE	1000	NE
4-Chloroaniline	--	--	--	<0.59	--	--	--	<0.57	--	NE	NE	1	400
Chrysene	--	--	--	**0.509**	--	--	--	**0.348**	--	70	70	70	10,000
bis(2-Chloroethoxy)methane	--	--	--	<0.29	--	--	--	<0.28	--	NE	NE	500	NE
bis(2-Chloroethyl)ether	--	--	--	<0.29	--	--	--	<0.28	--	0.7	2	0.7	800
bis(2-Chloroisopropyl)ether	--	--	--	<0.29	--	--	--	<0.28	--	0.7	30	0.7	10,000
1,2-Dichlorobenzene	--	--	--	<0.29	--	--	--	<0.28	--	100	30	9	10,000
1,2-Diphenylhydrazine	--	--	--	<0.29	--	--	--	<0.28	--	NE	NE	50	NE
1,3-Dichlorobenzene	--	--	--	<0.29	--	--	--	<0.28	--	100	100	3	5,000
1,4-Dichlorobenzene	--	--	--	<0.29	--	--	--	<0.28	--	1	80	0.7	10,000
2,4-Dinitrotoluene	--	--	--	<0.59	--	--	--	<0.57	--	2	2	0.7	800
2,6-Dinitrotoluene	--	--	--	<0.59	--	--	--	<0.57	--	NE	NE	100	NE
3,3'-Dichlorobenzidine	--	--	--	<0.59	--	--	--	<0.57	--	3	3	3	1,000
Dibenzo(a,h)anthracene	--	--	--	<0.12	--	--	--	<0.11	--	0.7	0.7	0.7	300
Dibenzofuran	--	--	--	<0.12	--	--	--	<0.11	--	NE	NE	100	NE
Di-n-butyl phthalate	--	--	--	<0.29	--	--	--	<0.28	--	NE	NE	50	NE
Di-n-octyl phthalate	--	--	--	<0.29	--	--	--	<0.28	--	NE	NE	1000	NE
Diethyl phthalate	--	--	--	<0.29	--	--	--	<0.28	--	200	300	10	10,000
Dimethyl phthalate	--	--	--	<0.29	--	--	--	<0.28	--	50	600	0.7	10,000
bis(2-Ethylhexyl)phthalate	--	--	--	<0.29	--	--	--	<0.28	--	90	90	90	10,000
Fluoranthene	--	--	--	**1.02**	--	--	--	**0.882**	--	1000	1000	1000	10,000
Fluorene	--	--	--	<0.12	--	--	--	<0.11	--	1000	1000	1000	10,000
Hexachlorobenzene	--	--	--	<0.29	--	--	--	<0.28	--	0.7	0.7	0.7	8
Hexachlorobutadiene	--	--	--	<0.29	--	--	--	<0.28	--	30	30	30	1,000
Hexachlorocyclopentadiene	--	--	--	<0.59	--	--	--	<0.57	--	NE	NE	50	NE
Hexachloroethane	--	--	--	<0.29	--	--	--	<0.28	--	3	50	0.7	2,000
Indeno(1,2,3-cd)pyrene	--	--	--	**0.335**	--	--	--	<0.28	--	7	7	7	3,000
Isophorone	--	--	--	<0.29	--	--	--	<0.28	--	NE	NE	100	NE
2-Methylnaphthalene	--	--	--	<0.12	--	--	--	<0.11	--	80	300	0.7	5,000
Naphthalene	--	--	--	<0.12	--	--	--	<0.11	--	20	500	4	10,000
Nitrobenzene	--	--	--	<0.29	--	--	--	<0.28	--	NE	NE	500	NE
N-Nitroso-di-n-propylamine	--	--	--	<0.29	--	--	--	<0.28	--	NE	NE	50	NE
N-Nitrosodiphenylamine	--	--	--	<0.29	--	--	--	<0.28	--	NE	NE	100	NE
Phenanthrene	--	--	--	**0.579**	--	--	--	**0.624**	--	500	500	10	10,000
Pyrene	--	--	--	**0.955**	--	--	--	**0.759**	--	1000	1000	1000	10,000
1,2,4-Trichlorobenzene	--	--	--	<0.29	--	--	--	<0.28	--	6	700	2	10,000
TOTAL PETROLEUM HYDROCARBONS - GASOLINE RANGE ORGANICS 8015 (mg/kg)													
TPH-GRO (VOA)	--	--	--	<6.5	--	--	--	<6.6	--	NE	NE	NE	NE
PESTICIDES 8081B (mg/kg)													
Aldrin	--	--	--	<0.0056	--	--	--	<0.0056	--	0.08	0.08	0.08	30
alpha-BHC	--	--	--	<0.0056	--	--	--	<0.0056	--	NE	NE	50	NE
beta-BHC	--	--	--	<0.0056	--	--	--	<0.0056	--	NE	NE	10	NE
delta-BHC	--	--	--	<0.0056	--	--	--	<0.0056	--	NE	NE	10	NE
gamma-BHC (Lindane)	--	--	--	<0.0030	--	--	--	<0.0030	--	1	0.5	0.003	600
Chlordane	--	--	--	<0.056	--	--	--	<0.056	--	5	5	5	600
Dieldrin	--	--	--	<0.0056	--	--	--	<0.0056	--	0.08	0.08	0.08	30
4,4'-DDD	--	--	--	<0.0056	--	--	--	<0.0056	--	8	8	8	600
4,4'-DDE	--	--	--	<0.0056	--	--	--	<0.0056	--	6	6	6	600
4,4'-DDT	--	--	--	<0.0056	--	--	--	<0.0056	--	6	6	6	600
Endrin	--	--	--	<0.0056	--	--	--	<0.0056	--	10	10	10	200
Endosulfan sulfate	--	--	--	<0.0056	--	--	--	<0.0056	--	NE	NE	NE	NE
Endosulfan-I	--	--	--	<0.0056	--	--	--	<0.0056	--	300	1	0.5	5,000
Endosulfan-II	--	--	--	<0.0056	--	--	--	<0.0056	--	300	1	0.5	5,000
Heptachlor	--	--	--	<0.0056	--	--	--	<0.0056	--	0.3	0.3	0.3	100
Heptachlor epoxide	--	--	--	<0.0056	--	--	--	<0.0056	--	0.1	0.1	0.1	10
Hexachlorobenzene	--	--	--	<0.0056	--	--	--	<0.0056	--	0.7	0.7	0.7	8
Methoxychlor	--	--	--	<0.0056	--	--	--	<0.0056	--	200	200	200	4,000
Endrin ketone	--	--	--	<0.0056	--	--	--	<0.0056	--	NE	NE	NE	NE
POLYCHLORINATED BIPHENYLS 8082A (mg/kg)													
Aroclor 1016	--	--	--	<0.028	--	--	--	<0.028	--	1	1	1	100
Aroclor 1221	--	--	--	<0.028	--	--	--	<0.028	--	1	1	1	100
Aroclor 1232	--	--	--	<0.028	--	--	--	<0.028	--	1	1	1	100
Aroclor 1242	--	--	--	<0.028	--	--	--	<0.028	--	1	1	1	100
Aroclor 1248	--	--	--	<0.028	--	--	--	<0.028	--	1	1	1	100
Aroclor 1254	--	--	--	<0.028	--	--	--	<0.028	--	1	1	1	100
Aroclor 1260	--	--	--	<0.028	--	--	--	<0.028	--	1	1	1	100
Aroclor 1262	--	--	--	<0.028	--	--	--	<0.028	--	1	1	1	100
Aroclor 1268	--	--	--	<0.028	--	--	--	<0.028	--	1	1	1	100
HERBICIDES 8151 (mg/kg)													
2,4-D	-	-	-	<0.018	-	-	-	<0.019	-	NE	NE	NE	NE
2,4,5-TP (Silvex)	-	-	-	<0.0037	-	-	-	<0.0037	-	NE	NE	NE	NE
2,4,5-T	-	-	-	<0.0037	-	-	-	<0.0037	-	NE	NE	NE	NE
TOTAL PETROLEUM HYDROCARBONS - DIESEL RANGE ORGANICS 8015 (mg/kg)													
TPH-DRO (Semi-VOA)	-	-	-	**41.9**	-	-	-	**33.3**	-	NE	NE	NE	NE
TOTAL METALS (mg/kg)													
Antimony	--	--	--	--	--	--	--	--	--	20	20	20	300
Arsenic	-	-	-	**3.5**	-	-	-	**2.5**	-	20	20	20	500
Barium	-	-	-	**36.5**	-	-	-	**16.3**	-	1,000	1,000	1000	10,000
Beryllium	-	-	-	-	-	-	-	-	-	90	90	90	2,000
Cadmium	-	-	-	<0.58	-	-	-	<0.59	-	70	70	70	1,000
Chromium	-	-	-	**12.6**	-	-	-	**8.2**	-	100	100	100	2,000
Lead	**138**	**4.1**	**488**	**71.7**	**340**	**4.8**	**62.3**	**22.8**	**23.9**	200	200	200	6,000
Mercury	-	-	-	**0.6**	-	-	-	**0.11**	-	20	20	20	300
Nickel	-	-	-	-	-	-	-	-	-	600	600	20	10,000
Selenium	-	-	-	<2.3	-	-	-	<2.4	-	400	400	400	7,000
Silver	-	-	-	<0.58	-	-	-	<0.59	-	100	100	100	2,000
Thallium	-	-	-	-	-	-	-	-	-	8	8	8	800
Vanadium	-	-	-	-	-	-	-	-	-	400	400	400	7,000
Zinc	-	-	-	-	-	-	-	-	-	1,000	1,000	1000	10,000

NOTES:

-- is analysis not performed	mg/kg is milligrams per kilogram.	SVOC is semi-volatile organic compound
NE is not established.	mg/L is milligrams per liter.	<2.0 indicates not detected at or above the laboratory reporting limit of 2.0 mg/kg.
ND is not detected	PID is photoionization detector.	Analytes detected above the method reporting limit are in **Bold**
su is standard units.	ppmv is parts per million by volume	Analytes detected above MCP Reportable Concentrations are in Red

TABLE 8
SUMMARY OF SOIL ANALYTICAL DATA (BUILDING FOOTPRINT) - ALL OTHER ANALYSES

Maggiore Somerville
343-351 Summer Street
Somerville, Massachusetts

Sample Date	March 28, 2017								**MCP Method 1 Soil Standards (mg/kg)**		**MCP Reportable Concentrations (mg/kg)**	**MCP Method 3 Upper Concentration Limits (mg/kg)**
Sample ID	PC-14 10-15'	PC-14 5-10'	PC-15 0-15' COMP	PC-15 0-5'	PC-15 10-15'	PC-15 5-10'	PC-16 0-5' COMP	PC-16A 0-5'	S-1			
Depth (feet)	10-15	5-10	0-15	0-5	10-15	5-10	0-5	0-5				
PID (ppmv)	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	GW-2	GW-3	RCS-1	
SEMI-VOLATILE ORGANIC COMPOUNDS 8270D (mg/kg)												
Benzoic acid	--	--	<0.57	--	--	--	<0.59	--	NE	NE	1000	NE
2-Chlorophenol	--	--	<0.29	--	--	--	<0.29	--	100	100	0.7	3,000
4-Chloro-3-methyl phenol	--	--	<0.57	--	--	--	<0.59	--	NE	NE	1000	NE
2,4-Dichlorophenol	--	--	<0.57	--	--	--	<0.59	--	60	40	0.7	8,000
2,4-Dimethylphenol	--	--	<0.57	--	--	--	<0.59	--	100	500	0.7	10,000
2,4-Dinitrophenol	--	--	<0.57	--	--	--	<0.59	--	50	50	3	8,000
2-Methylphenol	--	--	<0.57	--	--	--	<0.59	--	NE	NE	500	NE
3&4-Methylphenol	--	--	<0.57	--	--	--	<0.59	--	NE	NE	500	NE
2-Nitrophenol	--	--	<0.57	--	--	--	<0.59	--	NE	NE	100	NE
4-Nitrophenol	--	--	<0.57	--	--	--	<0.59	--	NE	NE	100	NE
Pentachlorophenol	--	--	<0.57	--	--	--	<0.59	--	3	3	3	700
Phenol	--	--	<0.29	--	--	--	<0.29	--	50	20	1	10,000
2,4,5-Trichlorophenol	--	--	<0.57	--	--	--	<0.59	--	1000	600	4	10,000
2,4,6-Trichlorophenol	--	--	<0.57	--	--	--	<0.59	--	20	20	0.7	4,000
Acenaphthene	--	--	**0.756**	--	--	--	<0.12	--	1000	1000	4	10,000
Acenaphthylene	--	--	<0.11	--	--	--	<0.12	--	600	10	1	10,000
Acetophenone	--	--	<0.57	--	--	--	<0.59	--	NE	NE	1000	NE
Aniline	--	--	<0.57	--	--	--	<0.59	--	NE	NE	1000	NE
Anthracene	--	--	**1.75**	--	--	--	<0.12	--	1000	1000	1000	10,000
Benzo(a)anthracene	--	--	**4.83**	--	--	--	**0.314**	--	7	7	7	3,000
Benzo(a)pyrene	--	--	**5.22**	--	--	--	**0.374**	--	2	2	2	300
Benzo(b)fluoranthene	--	--	**4.09**	--	--	--	**0.297**	--	7	7	7	3,000
Benzo(g,h,i)perylene	--	--	**2.86**	--	--	--	**0.256**	--	1000	1000	1000	10,000
Benzo(k)fluoranthene	--	--	**3.45**	--	--	--	**0.295**	--	70	70	70	10,000
4-Bromophenyl phenyl ether	--	--	<0.29	--	--	--	<0.29	--	NE	NE	100	NE
Butyl benzyl phthalate	--	--	<0.29	--	--	--	<0.29	--	NE	NE	100	NE
2-Chloronaphthalene	--	--	<0.29	--	--	--	<0.29	--	NE	NE	1000	NE
4-Chloroaniline	--	--	<0.57	--	--	--	<0.59	--	NE	NE	1	400
Chrysene	--	--	**4.65**	--	--	--	**0.349**	--	70	70	70	10,000
bis(2-Chloroethoxy)methane	--	--	<0.29	--	--	--	<0.29	--	NE	NE	500	NE
bis(2-Chloroethyl)ether	--	--	<0.29	--	--	--	<0.29	--	0.7	2	0.7	800
bis(2-Chloroisopropyl)ether	--	--	<0.29	--	--	--	<0.29	--	0.7	30	0.7	10,000
1,2-Dichlorobenzene	--	--	<0.29	--	--	--	<0.29	--	100	30	9	10,000
1,2-Diphenylhydrazine	--	--	<0.29	--	--	--	<0.29	--	NE	NE	50	NE
1,3-Dichlorobenzene	--	--	<0.29	--	--	--	<0.29	--	100	100	3	5,000
1,4-Dichlorobenzene	--	--	<0.29	--	--	--	<0.29	--	1	80	0.7	10,000
2,4-Dinitrotoluene	--	--	<0.57	--	--	--	<0.59	--	2	2	0.7	800
2,6-Dinitrotoluene	--	--	<0.57	--	--	--	<0.59	--	NE	NE	100	NE
3,3'-Dichlorobenzidine	--	--	<0.57	--	--	--	<0.59	--	3	3	3	1,000
Dibenzo(a,h)anthracene	--	--	**1.05**	--	--	--	<0.12	--	0.7	0.7	0.7	300
Dibenzofuran	--	--	**0.294**	--	--	--	<0.12	--	NE	NE	100	NE
Di-n-butyl phthalate	--	--	<0.29	--	--	--	<0.29	--	NE	NE	50	NE
Di-n-octyl phthalate	--	--	<0.29	--	--	--	<0.29	--	NE	NE	1000	NE
Diethyl phthalate	--	--	<0.29	--	--	--	<0.29	--	200	300	10	10,000
Dimethyl phthalate	--	--	<0.29	--	--	--	<0.29	--	50	600	0.7	10,000
bis(2-Ethylhexyl)phthalate	--	--	<0.29	--	--	--	<0.29	--	90	90	90	10,000
Fluoranthene	--	--	**10.7**	--	--	--	**0.541**	--	1000	1000	1000	10,000
Fluorene	--	--	**0.537**	--	--	--	<0.12	--	1000	1000	1000	10,000
Hexachlorobenzene	--	--	<0.29	--	--	--	<0.29	--	0.7	0.7	0.7	8
Hexachlorobutadiene	--	--	<0.29	--	--	--	<0.29	--	30	30	30	1,000
Hexachlorocyclopentadiene	--	--	<0.57	--	--	--	<0.59	--	NE	NE	50	NE
Hexachloroethane	--	--	<0.29	--	--	--	<0.29	--	3	50	0.7	2,000
Indeno(1,2,3-cd)pyrene	--	--	**3.21**	--	--	--	<0.29	--	7	7	7	3,000
Isophorone	--	--	<0.29	--	--	--	<0.29	--	NE	NE	100	NE
2-Methylnaphthalene	--	--	**0.133**	--	--	--	<0.12	--	80	300	0.7	5,000
Naphthalene	--	--	**0.158**	--	--	--	<0.12	--	20	500	4	10,000
Nitrobenzene	--	--	<0.29	--	--	--	<0.29	--	NE	NE	500	NE
N-Nitroso-di-n-propylamine	--	--	<0.29	--	--	--	<0.29	--	NE	NE	50	NE
N-Nitrosodiphenylamine	--	--	<0.29	--	--	--	<0.29	--	NE	NE	100	NE
Phenanthrene	--	--	**7.19**	--	--	--	**0.409**	--	500	500	10	10,000
Pyrene	--	--	**10.1**	--	--	--	**0.528**	--	1000	1000	1000	10,000
1,2,4-Trichlorobenzene	--	--	<0.29	--	--	--	<0.29	--	6	700	2	10,000
TOTAL PETROLEUM HYDROCARBONS - GASOLINE RANGE ORGANICS 8015 (mg/kg)												
TPH-GRO (VOA)	--	--	<7.0	--	--	--	<6.6	--	NE	NE	NE	NE
PESTICIDES 8081B (mg/kg)												
Aldrin	--	--	<0.0058	--	--	--	<0.0059	--	0.08	0.08	0.08	30
alpha-BHC	--	--	<0.0058	--	--	--	<0.0059	--	NE	NE	50	NE
beta-BHC	--	--	<0.0058	--	--	--	<0.0059	--	NE	NE	10	NE
delta-BHC	--	--	<0.0058	--	--	--	<0.0059	--	NE	NE	10	NE
gamma-BHC (Lindane)	--	--	<0.0030	--	--	--	<0.0030	--	1	0.5	0.003	600
Chlordane	--	--	<0.058	--	--	--	<0.059	--	5	5	5	600
Dieldrin	--	--	<0.0058	--	--	--	<0.0059	--	0.08	0.08	0.08	30
4,4'-DDD	--	--	<0.0058	--	--	--	<0.0059	--	8	8	8	600
4,4'-DDE	--	--	<0.0058	--	--	--	<0.0059	--	6	6	6	600
4,4'-DDT	--	--	<0.0058	--	--	--	<0.0059	--	6	6	6	600
Endrin	--	--	<0.0058	--	--	--	<0.0059	--	10	10	10	200
Endosulfan sulfate	--	--	<0.0058	--	--	--	<0.0059	--	NE	NE	NE	NE
Endosulfan-I	--	--	<0.0058	--	--	--	<0.0059	--	300	1	0.5	5,000
Endosulfan-II	--	--	<0.0058	--	--	--	<0.0059	--	300	1	0.5	5,000
Heptachlor	--	--	<0.0058	--	--	--	<0.0059	--	0.3	0.3	0.3	100
Heptachlor epoxide	--	--	<0.0058	--	--	--	<0.0059	--	0.1	0.1	0.1	10
Hexachlorobenzene	--	--	<0.0058	--	--	--	<0.0059	--	0.7	0.7	0.7	8
Methoxychlor	--	--	<0.0058	--	--	--	<0.0059	--	200	200	200	4,000
Endrin ketone	--	--	<0.0058	--	--	--	<0.0059	--	NE	NE	NE	NE
POLYCHLORINATED BIPHENYLS 8082A (mg/kg)												
Aroclor 1016	--	--	<0.029	--	--	--	<0.030	--	1	1	1	100
Aroclor 1221	--	--	<0.029	--	--	--	<0.030	--	1	1	1	100
Aroclor 1232	--	--	<0.029	--	--	--	<0.030	--	1	1	1	100
Aroclor 1242	--	--	<0.029	--	--	--	<0.030	--	1	1	1	100
Aroclor 1248	--	--	<0.029	--	--	--	<0.030	--	1	1	1	100
Aroclor 1254	--	--	<0.029	--	--	--	<0.030	--	1	1	1	100
Aroclor 1260	--	--	<0.029	--	--	--	<0.030	--	1	1	1	100
Aroclor 1262	--	--	<0.029	--	--	--	<0.030	--	1	1	1	100
Aroclor 1268	--	--	<0.029	--	--	--	<0.030	--	1	1	1	100
HERBICIDES 8151 (mg/kg)												
2,4-D	-	-	<0.019	-	-	-	<0.019	-	NE	NE	NE	NE
2,4,5-TP (Silvex)	-	-	<0.0038	-	-	-	<0.0038	-	NE	NE	NE	NE
2,4,5-T	-	-	<0.0038	-	-	-	<0.0038	-	NE	NE	NE	NE
TOTAL PETROLEUM HYDROCARBONS - DIESEL RANGE ORGANICS 8015 (mg/kg)												
TPH-DRO (Semi-VOA)	-	-	**976**	-	-	-	**59**	-	NE	NE	NE	NE
TOTAL METALS (mg/kg)												
Antimony	--	--	--	--	--	--	--	--	20	20	20	300
Arsenic	-	-	**5.4**	-	-	-	**10.7**	-	20	20	20	500
Barium	-	-	**59.1**	-	-	-	**131**	-	1,000	1,000	1000	10,000
Beryllium	-	-	-	-	-	-	-	-	90	90	90	2,000
Cadmium	-	-	<0.59	-	-	-	<0.61	-	70	70	70	1,000
Chromium	-	-	**20.1**	-	-	-	**25.9**	-	100	100	100	2,000
Lead	**2.4**	**59.8**	**72.6**	**197**	**3.2**	**9.7**	**516**	**1270**	200	200	200	6,000
Mercury	-	-	**0.2**	-	-	-	**0.4**	-	20	20	20	300
Nickel	-	-	-	-	-	-	-	-	600	600	20	10,000
Selenium	-	-	<2.3	-	-	-	<2.5	-	400	400	400	7,000
Silver	-	-	<0.59	-	-	-	<0.61	-	100	100	100	2,000
Thallium	-	-	-	-	-	-	-	-	8	8	8	800
Vanadium	-	-	-	-	-	-	-	-	400	400	400	7,000
Zinc	-	-	-	-	-	-	-	-	1,000	1,000	1000	10,000

NOTES:

-- is analysis not performed.
NE is not established.
ND is not detected.
su is standard units

mg/kg is milligrams per kilogram
mg/L is milligrams per liter.
PID is photoionization detector
ppmv is parts per million by volume.

SVOC is semi-volatile organic compound.
<2.0 indicates not detected at or above the laboratory reporting limit of 2.0 mg/kg
Analytes detected above the method reporting limit are in **Bold**
Analytes detected above MCP Reportable Concentrations are in Red

TABLE 8

SUMMARY OF SOIL ANALYTICAL DATA (BUILDING FOOTPRINT) - ALL OTHER ANALYSES

Maggiore Somerville
343-351 Summer Street
Somerville, Massachusetts

Sample Date Sample ID Depth (feet) PID (ppmv)	PC-16B 0-5' 0-5 BDL	PC-16C 0-5' 0-5 BDL	PC-17 0-5' COMP 0-5 BDL	PC-17A 0-5' 0-5 BDL	PC-17B 0-5' 0-5 BDL	PC-17C 0-5' 0-5 BDL	MCP Method 1 Soil Standards (mg/kg) S-1 GW-2	 GW-3	MCP Reportable Concentrations (mg/kg) RCS-1	MCP Method 3 Upper Concentration Limits (mg/kg)
SEMI-VOLATILE ORGANIC COMPOUNDS 8270D (mg/kg)										
Benzoic acid	--	--	<0.57	--	--	--	NE	NE	1000	NE
2-Chlorophenol	--	--	<0.29	--	--	--	100	100	0.7	3,000
4-Chloro-3-methyl phenol	--	--	<0.57	--	--	--	NE	NE	1000	NE
2,4-Dichlorophenol	--	--	<0.57	--	--	--	60	40	0.7	8,000
2,4-Dimethylphenol	--	--	<0.57	--	--	--	100	500	0.7	10,000
2,4-Dinitrophenol	--	--	<0.57	--	--	--	50	50	3	8,000
2-Methylphenol	--	--	<0.57	--	--	--	NE	NE	500	NE
3&4-Methylphenol	--	--	<0.57	--	--	--	NE	NE	500	NE
2-Nitrophenol	--	--	<0.57	--	--	--	NE	NE	100	NE
4-Nitrophenol	--	--	<0.57	--	--	--	NE	NE	100	NE
Pentachlorophenol	--	--	<0.57	--	--	--	3	3	3	700
Phenol	--	--	<0.29	--	--	--	50	20	1	10,000
2,4,5-Trichlorophenol	--	--	<0.57	--	--	--	1000	600	4	10,000
2,4,6-Trichlorophenol	--	--	<0.57	--	--	--	20	20	0.7	4,000
Acenaphthene	--	--	**0.713**	--	--	--	1000	1000	4	10,000
Acenaphthylene	--	--	**0.14**	--	--	--	600	10	1	10,000
Acetophenone	--	--	<0.57	--	--	--	NE	NE	1000	NE
Aniline	--	--	<0.57	--	--	--	NE	NE	1000	NE
Anthracene	--	--	**1.43**	--	--	--	1000	1000	1000	10,000
Benzo(a)anthracene	--	--	**3.28**	--	--	--	7	7	7	3,000
Benzo(a)pyrene	--	--	**3.4**	--	--	--	2	2	2	300
Benzo(b)fluoranthene	--	--	**2.73**	--	--	--	7	7	7	3,000
Benzo(g,h,i)perylene	--	--	**1.72**	--	--	--	1000	1000	1000	10,000
Benzo(k)fluoranthene	--	--	**2.37**	--	--	--	70	70	70	10,000
4-Bromophenyl phenyl ether	--	--	<0.29	--	--	--	NE	NE	100	NE
Butyl benzyl phthalate	--	--	<0.29	--	--	--	NE	NE	100	NE
2-Chloronaphthalene	--	--	<0.29	--	--	--	NE	NE	1000	NE
4-Chloroaniline	--	--	<0.57	--	--	--	NE	NE	1	400
Chrysene	--	--	**3.1**	--	--	--	70	70	70	10,000
bis(2-Chloroethoxy)methane	--	--	<0.29	--	--	--	NE	NE	500	NE
bis(2-Chloroethyl)ether	--	--	<0.29	--	--	--	0.7	2	0.7	800
bis(2-Chloroisopropyl)ether	--	--	<0.29	--	--	--	0.7	30	0.7	10,000
1,2-Dichlorobenzene	--	--	<0.29	--	--	--	100	30	9	10,000
1,2-Diphenylhydrazine	--	--	<0.29	--	--	--	NE	NE	50	NE
1,3-Dichlorobenzene	--	--	<0.29	--	--	--	100	100	3	5,000
1,4-Dichlorobenzene	--	--	<0.29	--	--	--	1	80	0.7	10,000
2,4-Dinitrotoluene	--	--	<0.57	--	--	--	2	2	0.7	800
2,6-Dinitrotoluene	--	--	<0.57	--	--	--	NE	NE	100	NE
3,3'-Dichlorobenzidine	--	--	<0.57	--	--	--	3	3	3	1,000
Dibenzo(a,h)anthracene	--	--	**0.651**	--	--	--	0.7	0.7	0.7	300
Dibenzofuran	--	--	**0.368**	--	--	--	NE	NE	100	NE
Di-n-butyl phthalate	--	--	<0.29	--	--	--	NE	NE	50	NE
Di-n-octyl phthalate	--	--	<0.29	--	--	--	NE	NE	1000	NE
Diethyl phthalate	--	--	<0.29	--	--	--	200	300	10	10,000
Dimethyl phthalate	--	--	<0.29	--	--	--	50	600	0.7	10,000
bis(2-Ethylhexyl)phthalate	--	--	<0.29	--	--	--	90	90	90	10,000
Fluoranthene	--	--	**6.6**	--	--	--	1000	1000	1000	10,000
Fluorene	--	--	**0.575**	--	--	--	1000	1000	1000	10,000
Hexachlorobenzene	--	--	<0.29	--	--	--	0.7	0.7	0.7	8
Hexachlorobutadiene	--	--	<0.29	--	--	--	30	30	30	1,000
Hexachlorocyclopentadiene	--	--	<0.57	--	--	--	NE	NE	50	NE
Hexachloroethane	--	--	<0.29	--	--	--	3	50	0.7	2,000
Indeno(1,2,3-cd)pyrene	--	--	**1.88**	--	--	--	7	7	7	3,000
Isophorone	--	--	<0.29	--	--	--	NE	NE	100	NE
2-Methylnaphthalene	--	--	**0.218**	--	--	--	80	300	0.7	5,000
Naphthalene	--	--	**0.264**	--	--	--	20	500	4	10,000
Nitrobenzene	--	--	<0.29	--	--	--	NE	NE	500	NE
N-Nitroso-di-n-propylamine	--	--	<0.29	--	--	--	NE	NE	50	NE
N-Nitrosodiphenylamine	--	--	<0.29	--	--	--	NE	NE	100	NE
Phenanthrene	--	--	**5.65**	--	--	--	500	500	10	10,000
Pyrene	--	--	**6.29**	--	--	--	1000	1000	1000	10,000
1,2,4-Trichlorobenzene	--	--	<0.29	--	--	--	6	700	2	10,000
TOTAL PETROLEUM HYDROCARBONS - GASOLINE RANGE ORGANICS 8015 (mg/kg)										
TPH-GRO (VOA)	--	--	<7.1	--	--	--	NE	NE	NE	NE
PESTICIDES 8081B (mg/kg)										
Aldrin	--	--	<0.0056	--	--	--	0.08	0.08	0.08	30
alpha-BHC	--	--	<0.0056	--	--	--	NE	NE	50	NE
beta-BHC	--	--	<0.0056	--	--	--	NE	NE	10	NE
delta-BHC	--	--	<0.0056	--	--	--	NE	NE	10	NE
gamma-BHC (Lindane)	--	--	<0.0030	--	--	--	1	0.5	0.003	600
Chlordane	--	--	<0.056	--	--	--	5	5	5	600
Dieldrin	--	--	<0.0056	--	--	--	0.08	0.08	0.08	30
4,4'-DDD	--	--	<0.0056	--	--	--	8	8	8	600
4,4'-DDE	--	--	<0.0056	--	--	--	6	6	6	600
4,4'-DDT	--	--	**0.0082**	--	--	--	6	6	6	600
Endrin	--	--	<0.0056	--	--	--	10	10	10	200
Endosulfan sulfate	--	--	<0.0056	--	--	--	NE	NE	NE	NE
Endosulfan-I	--	--	<0.0056	--	--	--	300	1	0.5	5,000
Endosulfan-II	--	--	<0.0056	--	--	--	300	1	0.5	5,000
Heptachlor	--	--	<0.0056	--	--	--	0.3	0.3	0.3	100
Heptachlor epoxide	--	--	<0.0056	--	--	--	0.1	0.1	0.1	10
Hexachlorobenzene	--	--	<0.0056	--	--	--	0.7	0.7	0.7	8
Methoxychlor	--	--	<0.0056	--	--	--	200	200	200	4,000
Endrin ketone	--	--	<0.0056	--	--	--	NE	NE	NE	NE
POLYCHLORINATED BIPHENYLS 8082A (mg/kg)										
Aroclor 1016	--	--	<0.028	--	--	--	1	1	1	100
Aroclor 1221	--	--	<0.028	--	--	--	1	1	1	100
Aroclor 1232	--	--	<0.028	--	--	--	1	1	1	100
Aroclor 1242	--	--	<0.028	--	--	--	1	1	1	100
Aroclor 1248	--	--	<0.028	--	--	--	1	1	1	100
Aroclor 1254	--	--	<0.028	--	--	--	1	1	1	100
Aroclor 1260	--	--	<0.028	--	--	--	1	1	1	100
Aroclor 1262	--	--	<0.028	--	--	--	1	1	1	100
Aroclor 1268	--	--	<0.028	--	--	--	1	1	1	100
HERBICIDES 8151 (mg/kg)										
2,4-D	-	-	<0.019	-	-	-	NE	NE	NE	NE
2,4,5-TP (Silvex)	-	-	<0.0039	-	-	-	NE	NE	NE	NE
2,4,5-T	-	-	<0.0039	-	-	-	NE	NE	NE	NE
TOTAL PETROLEUM HYDROCARBONS - DIESEL RANGE ORGANICS 8015 (mg/kg)										
TPH-DRO (Semi-VOA)	-	-	**183**	-	-	-	NE	NE	NE	NE
TOTAL METALS (mg/kg)										
Antimony	--	--	--	--	--	--	20	20	20	300
Arsenic	-	-	**6.1**	-	-	-	20	20	20	500
Barium	-	-	**36.9**	-	-	-	1,000	1,000	1000	10,000
Beryllium	-	-	-	-	-	-	90	90	90	2,000
Cadmium	-	-	<0.58	-	-	-	70	70	70	1,000
Chromium	-	-	**14.6**	-	-	-	100	100	100	2,000
Lead	**1190**	70	**53.6**	**31.4**	**44.1**	**25.6**	200	200	200	6,000
Mercury	-	-	**0.11**	-	-	-	20	20	20	300
Nickel	-	-	-	-	-	-	600	600	20	10,000
Selenium	-	-	<2.3	-	-	-	400	400	400	7,000
Silver	-	-	<0.58	-	-	-	100	100	100	2,000
Thallium	-	-	-	-	-	-	8	8	8	800
Vanadium	-	-	-	-	-	-	400	400	400	7,000
Zinc	-	-	-	-	-	-	1,000	1,000	1000	10,000

NOTES:

-- is analysis not performed.	mg/kg is milligrams per kilogram.	SVOC is semi-volatile organic compound.
NE is not established.	mg/L is milligrams per liter.	<2.0 indicates not detected at or above the laboratory reporting limit of 2.0 mg/kg.
ND is not detected	PID is photoionization detector.	Analytes detected above the method reporting limit are in **Bold**
su is standard units	ppmv is parts per million by volume.	Analytes detected above MCP Reportable Concentrations are in Red

TABLE 9

SUMMARY OF SOIL STATISTICAL DATA AND CONTAMINANTS OF CONCERN IDENTIFICATION

Maggiore Somerville
343-351 Summer Street
Somerville, Massachusetts

	SUMMARY STATISTICS							MCP Method 1 Soil Standards (mg/kg) S-1		MCP Reportable Concentrations (mg/kg)	MCP Method 3 Upper Concentration Limits (mg/kg)	Is Compound a Contaminant of Concern	Rationale for COC
	Number of Samples Analyzed	Number of Detections	Minimum Detection	Maximum Detection	Mean Concentration	Median Concentration	Frequency of Detection (%)	GW-2	GW-3	RCS-1			
VOLATILE ORGANIC COMPOUNDS (mg/kg)													
Acetone	19	14	**0.02**	**0.11**	**0.04**	**0.03**	74%	50	400	6	10,000	Yes	1
Benzene	19	1	**0.001**	**0.001**	**0.0003**	**0.0003**	5%	40	40	2	10,000	No	3
Bromobenzene	19	0	--	--	--	--	0%	NE	NE	100	NE	No	2
Bromochloromethane	19	0	--	--	--	--	0%	NE	NE	NE	NE	No	2
Bromodichloromethane	19	0	--	--	--	--	0%	0.1	30	0.1	5,000	No	2
Bromoform	19	0	--	--	--	--	0%	1	300	0.1	10,000	No	2
Bromomethane	19	0	--	--	--	--	0%	0.5	30	0.5	6,000	No	2
2-Butanone (MEK)	19	0	--	--	--	--	0%	50	400	4	10,000	No	2
n-Butylbenzene	19	0	--	--	--	--	0%	NE	NE	NE	NE	No	2
sec-Butylbenzene	19	0	--	--	--	--	0%	NE	NE	NE	NE	No	2
tert-Butylbenzene	19	0	--	--	--	--	0%	NE	NE	100	NE	No	2
Carbon disulfide	19	0	--	--	--	--	0%	NE	NE	100	NE	No	2
Carbon tetrachloride	19	0	--	--	--	--	0%	5	30	5	10,000	No	2
Chlorobenzene	19	0	--	--	--	--	0%	3	100	1	10,000	No	2
Chloroethane	19	0	--	--	--	--	0%	NE	NE	100	NE	No	2
Chloroform	19	0	--	--	--	--	0%	0.2	500	0.2	10,000	No	2
Chloromethane	19	0	--	--	--	--	0%	NE	NE	100	NE	No	2
o-Chlorotoluene	19	0	--	--	--	--	0%	NE	NE	100	NE	No	2
p-Chlorotoluene	19	0	--	--	--	--	0%	NE	NE	NE	NE	No	2
Di-Isopropyl ether	19	0	--	--	--	--	0%	NE	NE	100	NE	No	2
1,2-Dibromo-3-chloropropane	19	0	--	--	--	--	0%	NE	NE	10	NE	No	2
Dibromochloromethane	19	0	--	--	--	--	0%	0.03	20	0.005	5,000	No	2
1,2-Dibromoethane	19	0	--	--	--	--	0%	0.1	1	0.1	400	No	2
1,2-Dichlorobenzene	19	0	--	--	--	--	0%	100	300	9	10,000	No	2
1,3-Dichlorobenzene	19	0	--	--	--	--	0%	100	100	3	5,000	No	2
1,4-Dichlorobenzene	19	0	--	--	--	--	0%	1	80	0.7	10,000	No	2
Dichlorodifluoromethane	19	0	--	--	--	--	0%	NE	NE	1000	NE	No	2
1,1-Dichloroethane	19	0	--	--	--	--	0%	9	500	0.4	10,000	No	2
1,2-Dichloroethane	19	0	--	--	--	--	0%	0.1	20	0.1	9,000	No	2
1,1-Dichloroethene	19	0	--	--	--	--	0%	40	500	3	10,000	No	2
cis-1,2-Dichloroethene	19	0	--	--	--	--	0%	0.1	100	0.1	5,000	No	2
trans-1,2-Dichloroethene	19	0	--	--	--	--	0%	1	500	1	10,000	No	2
1,2-Dichloropropane	19	0	--	--	--	--	0%	0.1	30	0.1	10,000	No	2
1,3-Dichloropropane	19	0	--	--	--	--	0%	NE	NE	500	NE	No	2
2,2-Dichloropropane	19	0	--	--	--	--	0%	NE	NE	NE	NE	No	2
1,1-Dichloropropene	19	0	--	--	--	--	0%	NE	NE	NE	NE	No	2
cis-1,3-Dichloropropene	19	0	--	--	--	--	0%	NE	NE	0.01	NE	No	2
trans-1,3-Dichloropropene	19	0	--	--	--	--	0%	NE	NE	0.01	NE	No	2
1,4-Dioxane	19	0	--	--	--	--	0%	6	20	0.2	5,000	No	2
Ethyl Ether	19	0	--	--	--	--	0%	NE	NE	100	NE	No	2
Ethylbenzene	19	3	--	--	--	--	16%	500	500	40	10,000	No	2
Hexachlorobutadiene	19	0	--	--	--	--	0%	30	30	30	1,000	No	2
2-Hexanone	19	0	--	--	--	--	0%	NE	NE	100	NE	No	2
Isopropylbenzene	19	0	--	--	--	--	0%	NE	NE	1000	NE	No	2
p-Isopropyltoluene	19	0	--	--	--	--	0%	NE	NE	100	NE	No	2
Methyl Tert Butyl Ether	19	0	--	--	--	--	0%	100	100	0.1	5,000	No	2
4-Methyl-2-pentanone (MIBK)	19	0	--	--	--	--	0%	50	400	0.4	10,000	No	2
Methylene bromide	19	0	--	--	--	--	0%	NE	NE	500	NE	No	2
Methylene chloride	19	0	--	--	--	--	0%	4	400	0.1	7,000	No	2
Naphthalene	19	3	**0.01**	**0.03**	**0.006**	**0.003**	16%	20	500	4	10,000	Yes	1
n-Propylbenzene	19	0	--	--	--	--	0%	NE	NE	100	NE	No	2
Styrene	19	0	--	--	--	--	0%	4	70	3	10,000	No	2
tert-Amyl Methyl Ether	19	0	--	--	--	--	0%	NE	NE	NE	NE	No	2
tert-Butyl Ethyl Ether	19	0	--	--	--	--	0%	NE	NE	NE	NE	No	2
1,1,1,2-Tetrachloroethane	19	0	--	--	--	--	0%	0.1	80	0.1	5,000	No	2
1,1,2,2-Tetrachloroethane	19	0	--	--	--	--	0%	0.02	10	0.005	4,000	No	2
Tetrachloroethene	19	0	--	--	--	--	0%	10	30	1	10,000	No	2
Tetrahydrofuran	19	0	--	--	--	--	0%	NE	NE	500	NE	No	2
Toluene	19	0	--	--	--	--	0%	500	500	30	10,000	No	2
1,2,3-Trichlorobenzene	19	0	--	--	--	--	0%	NE	NE	NE	NE	No	2
1,2,4-Trichlorobenzene	19	0	--	--	--	--	0%	6	700	2	10,000	No	2
1,1,1-Trichloroethane	19	0	--	--	--	--	0%	500	500	30	10,000	No	2
1,1,2-Trichloroethane	19	0	--	--	--	--	0%	2	40	0.1	5,000	No	2
Trichloroethene	19	0	--	--	--	--	0%	0.3	30	0.3	600	No	2
Trichlorofluoromethane	19	0	--	--	--	--	0%	NE	NE	1000	NE	No	2
1,2,3-Trichloropropane	19	0	--	--	--	--	0%	NE	NE	100	NE	No	2
1,2,4-Trimethylbenzene	19	0	--	--	--	--	0%	NE	NE	1000	NE	No	2
1,3,5-Trimethylbenzene	19	0	--	--	--	--	0%	NE	NE	10	NE	No	2
Vinyl chloride	19	0	--	--	--	--	0%	0.7	1	0.7	600	No	2
m,p-Xylene	19	6	**0.004**	**0.121**	**0.010**	**0.001**	32%	100	500	100	10,000	Yes	1
o-Xylene	19	4	**0.003**	**0.034**	**0.004**	**0.001**	21%	100	500	100	10,000	Yes	1
Xylene (total)	19	6	**0.006**	**0.155**	**0.012**	**0.001**	32%	100	500	100	10,000	Yes	1
SEMI-VOLATILE ORGANIC COMPOUNDS 8270D (mg/kg)													
Benzoic acid	19	0	--	--	--	--	0%	NE	NE	1000	NE	No	2
2-Chlorophenol	19	0	--	--	--	--	0%	100	100	0.7	3,000	No	2
4-Chloro-3-methyl phenol	19	0	--	--	--	--	0%	NE	NE	1000	NE	No	2
2,4-Dichlorophenol	19	0	--	--	--	--	0%	60	40	0.7	8,000	No	2
2,4-Dimethylphenol	19	0	--	--	--	--	0%	100	500	0.7	10,000	No	2
2,4-Dinitrophenol	19	0	--	--	--	--	0%	50	50	3	8,000	No	2
2-Methylphenol	19	0	--	--	--	--	0%	NE	NE	500	NE	No	2
3&4-Methylphenol	19	0	--	--	--	--	0%	NE	NE	500	NE	No	2
2-Nitrophenol	19	0	--	--	--	--	0%	NE	NE	100	NE	No	2
4-Nitrophenol	19	0	--	--	--	--	0%	NE	NE	100	NE	No	2
Pentachlorophenol	19	0	--	--	--	--	0%	3	3	3	700	No	2
Phenol	19	0	--	--	--	--	0%	50	20	1	10,000	No	2
2,4,5-Trichlorophenol	19	0	--	--	--	--	0%	1000	600	4	10,000	No	2
2,4,6-Trichlorophenol	19	0	--	--	--	--	0%	20	20	0.7	4,000	No	2
Acenaphthene	19	7	**0.2**	**1.1**	**0.3**	**0.1**	37%	1000	1000	4	10,000	Yes	1
Acenaphthylene	19	9	**0.1**	**2.7**	**0.3**	**0.1**	47%	600	10	1	10,000	Yes	1
Acetophenone	19	0	--	--	--	--	0%	NE	NE	1000	NE	No	2
Aniline	19	0	--	--	--	--	0%	NE	NE	1000	NE	No	2
Anthracene	19	14	**0.1**	**5.5**	**1.0**	**0.3**	74%	1000	1000	1000	10,000	Yes	1
Benzo(a)anthracene	19	17	**0.1**	**11.6**	**2.6**	**1.3**	89%	7	7	7	3,000	Yes	1
Benzo(a)pyrene	19	16	**0.4**	**9.0**	**2.4**	**1.3**	84%	2	2	2	300	Yes	1
Benzo(b)fluoranthene	19	16	**0.3**	**9.0**	**2.1**	**0.9**	84%	7	7	7	3,000	Yes	1
Benzo(g,h,i)perylene	19	16	**0.2**	**5.2**	**1.3**	**0.7**	84%	1000	1000	1000	10,000	Yes	1
Benzo(k)fluoranthene	19	17	**0.1**	**5.7**	**1.6**	**0.9**	89%	70	70	70	10,000	Yes	1
4-Bromophenyl phenyl ether	19	0	--	--	--	--	0%	NE	NE	100	NE	No	2
Butyl benzyl phthalate	19	0	--	--	--	--	0%	NE	NE	100	NE	No	2
2-Chloronaphthalene	19	0	--	--	--	--	0%	NE	NE	1000	NE	No	2
4-Chloroaniline	19	0	--	--	--	--	0%	NE	NE	1	400	No	2
Chrysene	19	18	**0.1**	**10.2**	**2.5**	**1.1**	95%	70	70	70	10,000	Yes	1
bis(2-Chloroethoxy)methane	19	0	--	--	--	--	0%	NE	NE	500	NE	No	2
bis(2-Chloroethyl)ether	19	0	--	--	--	--	0%	0.7	2	0.7	800	No	2
bis(2-Chloroisopropyl)ether	19	0	--	--	--	--	0%	0.7	30	0.7	10,000	No	2
1,2-Dichlorobenzene	19	0	--	--	--	--	0%	100	30	9	10,000	No	2
1,2-Diphenylhydrazine	19	0	--	--	--	--	0%	NE	NE	50	NE	No	2
1,3-Dichlorobenzene	19	0	--	--	--	--	0%	100	100	3	5,000	No	2
1,4-Dichlorobenzene	19	0	--	--	--	--	0%	1	80	0.7	10,000	No	2
2,4-Dinitrotoluene	19	0	--	--	--	--	0%	2	2	0.7	800	No	2
2,6-Dinitrotoluene	19	0	--	--	--	--	0%	NE	NE	100	NE	No	2
3,3'-Dichlorobenzidine	19	0	--	--	--	--	0%	3	3	3	1,000	No	2
Dibenzo(a,h)anthracene	19	11	**0.2**	**2.1**	**0.5**	**0.2**	58%	0.7	0.7	0.7	300	Yes	1
Dibenzofuran	19	6	**0.1**	**2.1**	**0.3**	**0.1**	32%	NE	NE	100	NE	Yes	1

NOTES:

mg/kg is milligrams per kilogram
ND is not detected
NE is not established
COC is contaminant of concern
VOC is volatile organic compound

EPH is extractable petroleum hydrocarbons
PAH is polycyclic aromatic hydrocarbons
<2.0 is not detected at or above the laboratory reporting limit of 2.0 mg/kg
Analytes detected above the method reporting limit are in **Bold**
Analytes detected above applicable MCP Soil Standards are in **Red**

RATIONALE FOR COC IDENTIFICATION:

1 = Compound detected above the method detection limit in a significant number of samples analyzed
2 = Compound not detected above the method detection limit in any of the samples analyzed
3 = Compound only detected in low concentration and in low frequency (less then 10% of samples analyzed).
4 = Compound is detected at a concentration indicative of background for the Site.

TABLE 9

SUMMARY OF SOIL STATISTICAL DATA AND CONTAMINANTS OF CONCERN IDENTIFICATION

Maggiore Somerville
343-351 Summer Street
Somerville, Massachusetts

	SUMMARY STATISTICS							MCP Method 1 Soil Standards (mg/kg)		MCP Reportable Concentrations (mg/kg)	MCP Method 3 Upper Concentration Limits (mg/kg)	Is Compound a Contaminant of Concern	Rationale for COC
	Number of Samples Analyzed	Number of Detections	Minimum Detection	Maximum Detection	Mean Concentration	Median Concentration	Frequency of Detection (%)	S-1		RCS-1			
								GW-2	GW-3				
SEMI-VOLATILE ORGANIC COMPOUNDS 8270D (mg/kg)													
Di-n-butyl phthalate	19	0	--	--	--	--	0%	NE	NE	50	NE	No	2
Di-n-octyl phthalate	19	0	--	--	--	--	0%	NE	NE	1000	NE	No	2
Diethyl phthalate	19	0	--	--	--	--	0%	200	300	10	10,000	No	2
Dimethyl phthalate	19	0	--	--	--	--	0%	50	600	0.7	10,000	No	2
bis(2-Ethylhexyl)phthalate	19	0	--	--	--	--	0%	90	90	90	10,000	No	2
Fluoranthene	19	19	0.1	29.4	6.2	2.2	100%	1000	1000	1000	10,000	Yes	1
Fluorene	19	8	0.1	4.6	0.5	0.1	42%	1000	1000	1000	10,000	Yes	1
Hexachlorobenzene	19	0	--	--	--	--	0%	0.7	0.7	0.7	8	No	2
Hexachlorobutadiene	19	0	--	--	--	--	0%	30	30	30	1,000	No	2
Hexachlorocyclopentadiene	19	0	--	--	--	--	0%	NE	NE	50	NE	No	2
Hexachloroethane	19	0	--	--	--	--	0%	3	50	0.7	2,000	No	2
Indeno(1,2,3-cd)pyrene	19	14	0.3	5.7	1.5	0.8	74%	7	7	7	3,000	Yes	1
Isophorone	19	0	--	--	--	--	0%	NE	NE	100	NE	No	2
2-Methylnaphthalene	19	5	0.1	0.5	0.1	0.1	26%	80	300	0.7	5,000	Yes	1
Naphthalene	19	5	0.2	0.7	0.1	0.1	26%	20	500	4	10,000	Yes	1
Nitrobenzene	19	0	--	--	--	--	0%	NE	NE	500	NE	No	2
N-Nitroso-di-n-propylamine	19	0	--	--	--	--	0%	NE	NE	50	NE	No	2
N-Nitrosodiphenylamine	19	0	--	--	--	--	0%	NE	NE	100	NE	No	2
Phenanthrene	19	18	0.1	33.5	4.9	1.0	95%	500	500	10	10,000	Yes	1
Pyrene	19	19	0.1	23.0	5.4	2.0	100%	1000	1000	1000	10,000	Yes	1
1,2,4-Trichlorobenzene	19	0	--	--	--	--	0%	6	700	2	10,000	No	2
TOTAL PETROLEUM HYDROCARBONS - GASOLINE RANGE ORGANICS 8015 (mg/kg)													
TPH-GRO (VOA)	22	0	--	--	--	--	0%	NE	NE	NE	NE	No	2
PESTICIDES 8081B (mg/kg)													
Aldrin	22	0	--	--	--	--	0%	0.08	0.08	0.08	30	No	2
alpha-BHC	22	0	--	--	--	--	0%	NE	NE	50	NE	No	2
beta-BHC	22	0	--	--	--	--	0%	NE	NE	10	NE	No	2
delta-BHC	22	0	--	--	--	--	0%	NE	NE	10	NE	No	2
gamma-BHC (Lindane)	22	0	--	--	--	--	0%	1	0.5	0.003	600	No	2
Chlordane	22	0	--	--	--	--	0%	5	5	5	600	No	2
Dieldrin	22	0	--	--	--	--	0%	0.08	0.08	0.08	30	No	2
4,4'-DDD	22	0	--	--	--	--	0%	8	8	8	600	No	2
4,4'-DDE	22	0	--	--	--	--	0%	6	6	6	600	No	2
4,4'-DDT	22	4	0.01	1.00	0.005	0.003	18%	6	6	6	600	Yes	1
Endrin	22	0	--	--	--	--	0%	10	10	10	200	No	2
Endosulfan sulfate	22	0	--	--	--	--	0%	NE	NE	NE	NE	No	2
Endosulfan-I	22	0	--	--	--	--	0%	300	1	0.5	5,000	No	2
Endosulfan-II	22	0	--	--	--	--	0%	300	1	0.5	5,000	No	2
Heptachlor	22	0	--	--	--	--	0%	0.3	0.3	0.3	100	No	2
Heptachlor epoxide	22	0	--	--	--	--	0%	0.1	0.1	0.1	10	No	2
Hexachlorobenzene	22	0	--	--	--	--	0%	0.7	0.7	0.7	8	No	2
Methoxychlor	22	0	--	--	--	--	0%	200	200	200	4,000	No	2
Endrin ketone	22	0	--	--	--	--	0%	NE	NE	NE	NE	No	2
POLYCHLORINATED BIPHENYLS 8082A (mg/kg)													
Aroclor 1016	19	0	--	--	--	--	0%	1	1	1	100	No	2
Aroclor 1221	19	0	--	--	--	--	0%	1	1	1	100	No	2
Aroclor 1232	19	0	--	--	--	--	0%	1	1	1	100	No	2
Aroclor 1242	19	0	--	--	--	--	0%	1	1	1	100	No	2
Aroclor 1248	19	0	--	--	--	--	0%	1	1	1	100	No	2
Aroclor 1254	19	0	--	--	--	--	0%	1	1	1	100	No	2
Aroclor 1260	19	0	--	--	--	--	0%	1	1	1	100	No	2
Aroclor 1262	19	0	--	--	--	--	0%	1	1	1	100	No	2
Aroclor 1268	19	0	--	--	--	--	0%	1	1	1	100	No	2
HERBICIDES 8151 (mg/kg)													
2,4-D	22	0	--	--	--	--	0%	NE	NE	NE	NE	No	2
2,4,5-TP (Silvex)	22	0	--	--	--	--	0%	NE	NE	NE	NE	No	2
2,4,5-T	22	0	--	--	--	--	0%	NE	NE	NE	NE	No	2
TOTAL PETROLEUM HYDROCARBONS - DIESEL RANGE ORGANICS 8015 (mg/kg)													
TPH-DRO (Semi-VOA)	22	16	18.8	976.0	115.7	40.6	73%	NE	NE	NE	NE	Yes	1
TOTAL METALS (mg/kg)													
Antimony	5	0	--	--	--	--	0%	20	20	20	300	No	2
Arsenic	22	22	1.5	14.4	7.3	6.6	100%	20	20	20	500	Yes	1
Barium	22	22	11.6	195.0	65.0	57.1	100%	1,000	1,000	1000	10,000	Yes	1
Beryllium	5	3	0.4	0.9	0.5	0.4	60%	90	90	90	2,000	Yes	1
Cadmium	22	2	0.5	0.8	0.3	0.3	9%	70	70	70	1,000	No	3
Chromium	22	22	8.2	46.5	23.5	21.6	100%	100	100	100	2,000	Yes	1
Lead	73	73	2.4	1270	93.1	23.9	100%	200	200	200	6,000	Yes	1
Mercury	22	14	0.05	3.3	0.4	0.1	64%	20	20	20	300	Yes	1
Nickel	5	5	7.5	33.5	18.6	11.5	100%	600	600	20	10,000	Yes	1
Selenium	22	0	--	--	--	--	0%	400	400	400	7,000	No	2
Silver	22	4	0.7	1.0	0.4	0.3	18%	100	100	100	2,000	Yes	1
Thallium	5	0	--	--	--	--	0%	8	8	8	800	No	2
Vanadium	5	5	14.0	55.6	31.4	18.8	100%	400	400	400	7,000	Yes	1
Zinc	5	5	25.9	245.0	78.7	28.3	100%	1,000	1,000	1000	10,000	Yes	1
EXTRACTABLE PETROLEUM HYDROCARBONS (mg/kg)													
C9-C18 Aliphatics	73	0	--	--	--	--	0%	1,000	1,000	1,000	20,000	No	2
C19-C36 Aliphatics	73	0	--	--	--	--	0%	3,000	3,000	3,000	20,000	No	2
C11-C22 Aromatics	73	1	26.7	26.7	0.9	0.0	1%	1,000	1,000	1,000	10,000	No	3
Acenaphthene	73	0	--	--	--	--	0%	1,000	1,000	4	10,000	No	2
Acenaphthylene	73	0	--	--	--	--	0%	600	10	1	10,000	No	2
Anthracene	73	0	--	--	--	--	0%	1,000	1,000	1,000	10,000	No	2
Benzo(a)anthracene	73	2	0.8	1.2	0.04	0.0	3%	7	7	7	3,000	No	3
Benzo(a)pyrene	73	2	1.0	1.3	0.04	0.0	3%	2	2	2	300	No	3
Benzo(b)fluoranthene	73	2	1.9	2.2	0.1	0.0	3%	7	7	7	3,000	No	3
Benzo(g,h,i)perylene	73	2	0.6	1.0	0.03	0.0	3%	1,000	1,000	1,000	10,000	No	3
Benzo(k)fluoranthene	73	1	1.6	1.6	0.04	0.0	1%	70	70	70	10,000	No	3
Chrysene	73	2	0.7	1.1	0.04	0.0	3%	70	70	70	10,000	No	3
Dibenz(a,h)anthracene	73	0	--	--	--	--	0%	0.7	0.7	0.7	300	No	2
Fluoranthene	73	2	1.1	1.7	0.05	0.0	3%	1,000	1,000	1,000	10,000	No	3
Fluorene	73	0	--	--	--	--	0%	1,000	1,000	1,000	10,000	No	2
Indeno(1,2,3-cd)pyrene	73	0	--	--	--	--	0%	7	7	7	3,000	No	2
2-Methylnaphthalene	73	0	--	--	--	--	0%	80	300	0.7	5,000	No	2
Naphthalene	73	0	--	--	--	--	0%	40	500	4	10,000	No	2
Phenanthrene	73	1	0.6	0.6	0.02	0.0	1%	500	500	10	10,000	No	3
Pyrene	73	2	1.1	1.5	0.05	0.0	3%	1,000	1,000	1,000	10,000	No	3
VOLATILE PETROLEUM HYDROCARBONS (mg/kg)													
C5- C8 Aliphatics	3	0	--	--	--	--	0%	100	100	100	5,000	No	2
C9- C12 Aliphatics	3	0	--	--	--	--	0%	1,000	1,000	1,000	20,000	No	2
C9- C10 Aromatics	3	0	--	--	--	--	0%	100	100	100	5,000	No	2
Benzene	3	0	--	--	--	--	0%	40	40	2	10,000	No	2
Ethylbenzene	3	0	--	--	--	--	0%	500	500	40	10,000	No	2
Methyl Tert Butyl Ether	3	0	--	--	--	--	0%	100	100	0.1	5,000	No	2
Naphthalene	3	0	--	--	--	--	0%	20	500	4	10,000	No	2
Toluene	3	0	--	--	--	--	0%	500	500	30	10,000	No	2
m,p-Xylene	3	0	--	--	--	--	0%	100	500	100	10,000	No	2
o-Xylene	3	0	--	--	--	--	0%	100	500	100	10,000	No	2
Total Xylenes	3	0	--	--	--	--	0%	100	500	100	10,000	No	2

NOTES:

mg/kg is milligrams per kilogram
ND is not detected
NE is not established
COC is contaminant of concern
VOC is volatile organic compound

EPH is extractable petroleum hydrocarbons
PAH is polycyclic aromatic hydrocarbons
<2.0 is not detected at or above the laboratory reporting limit of 2.0 mg/kg
Analytes detected above the method reporting limit are in **Bold**
Analytes detected above applicable MCP Soil Standards are in Red

RATIONALE FOR COC IDENTIFICATION:

1 = Compound detected above the method detection limit in a significant number of samples analyzed.
2 = Compound not detected above the method detection limit in any of the samples analyzed.
3 = Compound only detected in low concentration and in low frequency (less then 10% of samples analyzed).
4 = Compound is detected at a concentration indicative of background for the Site.

TABLE 10
SUMMARY OF SOIL EXPOSURE POINT CONCENTRATIONS: 0 - 15 FEET BELOW SURFACE GRADE

Maggiore Somerville
343-351 Summer Street
Somerville, Massachusetts

Sample Date	August 8, 2016					March 28, 2017									MCP Method 1 Soil Standards (mg/kg)		MCP Reportable Concentrations (mg/kg)	MCP Method 3 Upper Concentration Limits (mg/kg)
Sample ID	B-101	B-102	MW-105	MW-106	MW-107	PC-1 0-15' COMP	PC-1 0-5'	PC-1 10-15'	PC-1 5-10'	PC-2 0-15' COMP	PC-2 0-5'	PC-2 10-15'	PC-2 5-10'	PC-3 0-15' COMP	S-1		RCS-1	
Depth (feet)	0-10	0-10	13.5	9	13	0-15	0-5	10-15	5-10	0-15	0-5	10-15	5-10	0-15	GW-2	GW-3		
PID (ppmv)	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL				
VOLATILE ORGANIC COMPOUNDS (mg/kg)																		
Acetone	**0.02**	<0.012	--	--	--	**0.0542**	--	--	--	**0.0284**	--	--	--	**0.0407**	50	400	6	10,000
Naphthalene	<0.0050	<0.0061	--	--	--	0.0162	--	--	--	<0.0058	--	--	--	<0.0052	20	500	4	10,000
m,p-Xylene	<0.0020	<0.0024	--	--	--	<0.0022	--	--	--	<0.0023	--	--	--	**0.0144**	100	500	100	10,000
o-Xylene	<0.0020	<0.0024	--	--	--	<0.0022	--	--	--	<0.0023	--	--	--	**0.0067**	100	500	100	10,000
Xylene (total)	<0.0020	<0.0024	--	--	--	<0.0022	--	--	--	<0.0023	--	--	--	**0.0211**	100	500	100	10,000
SEMI-VOLATILE ORGANIC COMPOUNDS 8270D (mg/kg)																		
Acenaphthene	<0.10	<0.12	--	--	--	**1.1**	--	--	--	<0.12	--	--	--	<0.11	1000	1000	4	10,000
Acenaphthylene	**0.1**	**0.3**	--	--	--	0.705	--	--	--	<0.12	--	--	--	**0.127**	600	10	1	10,000
Anthracene	<0.10	**0.4**	--	--	--	**5**	--	--	--	**0.209**	--	--	--	**0.3**	1000	1000	1000	10,000
Benzo(a)anthracene	**0.6**	**2.0**	--	--	--	**11.6**	--	--	--	**0.628**	--	--	--	**1.31**	7	7	7	3,000
Benzo(a)pyrene	**0.9**	**1.6**	--	--	--	**9.02**	--	--	--	**0.58**	--	--	--	**1.27**	2	2	2	300
Benzo(b)fluoranthene	**0.8**	**1.5**	--	--	--	**9**	--	--	--	0.436	--	--	--	**0.944**	7	7	7	3,000
Benzo(g,h,i)perylene	**0.7**	**1.1**	--	--	--	**4.92**	--	--	--	0.361	--	--	--	**0.709**	1000	1000	1000	10,000
Benzo(k)fluoranthene	**0.7**	**1.6**	--	--	--	**5.68**	--	--	--	**0.5**	--	--	--	**0.939**	70	70	70	10,000
Chrysene	**0.6**	**1.9**	--	--	--	**10.2**	--	--	--	0.542	--	--	--	**1.13**	70	70	70	10,000
Dibenzo(a,h)anthracene	**0.2**	**0.3**	--	--	--	**2.06**	--	--	--	<0.12	--	--	--	**0.191**	0.7	0.7	0.7	300
Dibenzofuran	<0.10	<0.12	--	--	--	**1.06**	--	--	--	<0.12	--	--	--	<0.11	NE	NE	100	NE
Fluoranthene	**1.0**	**3.6**	--	--	--	**27.8**	--	--	--	**1.27**	--	--	--	**2.43**	1000	1000	1000	10,000
Fluorene	<0.10	<0.12	--	--	--	**1.71**	--	--	--	<0.12	--	--	--	<0.11	1000	1000	1000	10,000
Indeno(1,2,3-cd)pyrene	**0.7**	**1.1**	--	--	--	**5.73**	--	--	--	**0.394**	--	--	--	**0.762**	7	7	7	3,000
2-Methylnaphthalene	<0.10	<0.12	--	--	--	0.249	--	--	--	<0.12	--	--	--	<0.11	80	300	0.7	5,000
Naphthalene	<0.10	<0.12	--	--	--	**0.517**	--	--	--	<0.12	--	--	--	<0.11	20	500	4	10,000
Phenanthrene	**0.3**	**1.3**	--	--	--	**20.8**	--	--	--	**0.781**	--	--	--	**1.04**	500	500	10	10,000
Pyrene	**1.1**	**3.5**	--	--	--	**21.9**	--	--	--	**1.17**	--	--	--	**2.49**	1000	1000	1000	10,000
PESTICIDES 8081B (mg/kg)																		
4,4'-DDT	--	--	--	--	--	<0.0056	--	--	--	<0.0060	--	--	--	<0.0057	6	6	6	600
TOTAL PETROLEUM HYDROCARBONS - DIESEL RANGE ORGANICS 8015 (mg/kg)																		
TPH-DRO (Semi-VOA)	--	--	--	--	--	**197**	--	--	--	**26.5**	--	--	--	**135**	NE	NE	NE	NE
TOTAL METALS (mg/kg)																		
Arsenic	**5.7**	**13.5**	**1.5**	**2.2**	**12.9**	**3.2**	-	-	-	**5.8**	-	-	-	**7.1**	20	20	20	500
Barium	**21.8**	**195**	**11.6**	**22.9**	**95.3**	**54.1**	-	-	-	**31.9**	-	-	-	**66.6**	1,000	1,000	1000	10,000
Beryllium	**0.4**	**0.9**	<0.38	<0.36	**0.8**	-	-	-	-	-	-	-	-	-	90	90	90	2,000
Chromium	**12.9**	**40.4**	**9.7**	**13.5**	**46.5**	**23.9**	-	-	-	**18.5**	-	-	-	**27.1**	100	100	100	2,000
Lead	**9.1**	**431**	**2.6**	**4.1**	**11.4**	**46.3**	**86.9**	**9.6**	**17.7**	**8.7**	**23.9**	**11.2**	**6.4**	**44.7**	200	200	200	6,000
Mercury	<0.033	**3.0**	<0.033	<0.034	<0.035	<0.036	-	-	-	<0.040	-	-	-	<0.039	20	20	20	300
Nickel	**10.7**	**30.0**	**7.5**	**11.5**	**33.5**	-	-	-	-	-	-	-	-	-	600	600	20	10,000
Silver	<0.44	<0.48	<0.48	<0.45	<0.48	**0.96**	-	-	-	**0.71**	-	-	-	**0.85**	100	100	100	2,000
Vanadium	**18.8**	**50.0**	**14.0**	**18.5**	**55.6**	-	-	-	-	-	-	-	-	-	400	400	400	7,000
Zinc	**25.9**	**245**	**25.9**	**28.3**	**68.5**	-	-	-	-	-	-	-	-	-	1,000	1,000	1000	10,000

NOTES:

-- is analysis not performed or not applicable
mg/kg is milligrams per kilogram
ND is not detected
PID is photoionization detector
ppmv is parts per million by volume

EPC is Exposure Point Concentration
BDL is below the PID detection limit of 0.5 ppmv
<2.0 is not detected at or above the laboratory detection limit of 2.0 mg/kg
Analytes detected above the method reporting limit are in **Bold**
Analytes detected above applicable MCP Soil Standards are in Red

EPC is based on the arithmetic mean of soil concentrations within the Exposure Point Boundaries
Samples included in EPC calculations are those that are indicative of current conditions within the Disposal Site boundary
Using the average as the soil EPC is appropriate because the statistical dataset is normally distributed on a log scale; therefore, using the average does not underestimate risk

TABLE 10

SUMMARY OF SOIL EXPOSURE POINT CONCENTRATIONS: 0 - 15 FEET BELOW SURFACE GRADE

Maggiore Somerville
343-351 Summer Street
Somerville, Massachusetts

Sample Date	March 28, 2017													MCP Method 1 Soil Standards (mg/kg)		MCP Reportable Concentrations (mg/kg)	MCP Method 3 Upper Concentration Limits (mg/kg)
Sample ID	PC-3 0-5'	PC-3 10-15'	PC-3 5-10'	PC-4 0-15' COMP	PC-4 0-5'	PC-4 10-15'	PC-4 5-10'	PC-5 0-15' COMP	PC-5 0-5'	PC-5 10-15'	PC-5 5-10'	PC-6 0-15' COMP	PC-6 0-5'	S-1		RCS-1	
Depth (feet)	0-5	10-15	5-10	0-15	0-5	10-15	5-10	0-15	0-5	10-15	5-10	0-15	0-5	GW-2	GW-3		
PID (ppmv)	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL				
VOLATILE ORGANIC COMPOUNDS (mg/kg)																	
Acetone	--	--	--	**0.08**	--	--	--	**0.0375**	--	--	--	<0.011	--	50	400	6	10,000
Naphthalene	--	--	--	<0.0067	--	--	--	<0.0058	--	--	--	**0.0339**	--	20	500	4	10,000
m,p-Xylene	--	--	--	<0.0027	--	--	--	**0.0159**	--	--	--	<0.0022	--	100	500	100	10,000
o-Xylene	--	--	--	<0.0027	--	--	--	**0.0066**	--	--	--	<0.0022	--	100	500	100	10,000
Xylene (total)	--	--	--	<0.0027	--	--	--	**0.0225**	--	--	--	<0.0022	--	100	500	100	10,000
SEMI-VOLATILE ORGANIC COMPOUNDS 8270D (mg/kg)																	
Acenaphthene	--	--	--	**0.907**	--	--	--	**0.184**	--	--	--	**0.692**	--	1000	1000	4	10,000
Acenaphthylene	--	--	--	**2.65**	--	--	--	**0.485**	--	--	--	**1.09**	--	600	10	1	10,000
Anthracene	--	--	--	**5.5**	--	--	--	**0.529**	--	--	--	**2.3**	--	1000	1000	1000	10,000
Benzo(a)anthracene	--	--	--	**10.8**	--	--	--	**2.17**	--	--	--	**7.67**	--	7	7	7	3,000
Benzo(a)pyrene	--	--	--	**7.7**	--	--	--	**2.04**	--	--	--	**8.75**	--	2	2	2	300
Benzo(b)fluoranthene	--	--	--	**7.33**	--	--	--	**1.74**	--	--	--	**8.03**	--	7	7	7	3,000
Benzo(g,h,i)perylene	--	--	--	**3.81**	--	--	--	**1.24**	--	--	--	**5.18**	--	1000	1000	1000	10,000
Benzo(k)fluoranthene	--	--	--	**5.68**	--	--	--	**1.74**	--	--	--	**4.56**	--	70	70	70	10,000
Chrysene	--	--	--	**10**	--	--	--	**2.16**	--	--	--	**8.43**	--	70	70	70	10,000
Dibenzo(a,h)anthracene	--	--	--	**1.57**	--	--	--	**0.426**	--	--	--	**1.49**	--	0.7	0.7	0.7	300
Dibenzofuran	--	--	--	**2.12**	--	--	--	**0.128**	--	--	--	<0.11	--	NE	NE	100	NE
Fluoranthene	--	--	--	**29.4**	--	--	--	**4.11**	--	--	--	**21.6**	--	1000	1000	1000	10,000
Fluorene	--	--	--	**4.59**	--	--	--	**0.194**	--	--	--	**0.866**	--	1000	1000	1000	10,000
Indeno(1,2,3-cd)pyrene	--	--	--	**4.71**	--	--	--	**1.39**	--	--	--	**5.47**	--	7	7	7	3,000
2-Methylnaphthalene	--	--	--	**0.463**	--	--	--	<0.12	--	--	--	**0.329**	--	80	300	0.7	5,000
Naphthalene	--	--	--	**0.259**	--	--	--	<0.12	--	--	--	**0.706**	--	20	500	4	10,000
Phenanthrene	--	--	--	**33.5**	--	--	--	**2.4**	--	--	--	**15.1**	--	500	500	10	10,000
Pyrene	--	--	--	**23**	--	--	--	**3.91**	--	--	--	**20**	--	1000	1000	1000	10,000
PESTICIDES 8081B (mg/kg)																	
4,4'-DDT	--	--	--	**0.0103**	--	--	--	<0.0062	--	--	--	**0.0449**	--	6	6	6	600
TOTAL PETROLEUM HYDROCARBONS - DIESEL RANGE ORGANICS 8015 (mg/kg)																	
TPH-DRO (Semi-VOA)	--	--	--	**207**	-	-	-	**58.4**	-	-	-	**423**	-	NE	NE	NE	NE
TOTAL METALS (mg/kg)																	
Arsenic	-	-	-	**10.4**	-	-	-	**12.4**	-	-	-	**4.3**	-	20	20	20	500
Barium	-	-	-	**100**	-	-	-	**103**	-	-	-	**58**	-	1,000	1,000	1000	10,000
Beryllium	-	-	-	-	-	-	-	-	-	-	-	-	-	90	90	90	2,000
Chromium	-	-	-	**36.6**	-	-	-	**40.6**	-	-	-	**17.7**	-	100	100	100	2,000
Lead	**20.1**	**11.3**	**8.6**	**63.5**	**99.9**	**16.8**	**22.7**	**56.6**	**128**	**16.9**	**13.2**	**24.2**	**67.4**	200	200	200	6,000
Mercury	-	-	-	**0.058**	-	-	-	**0.51**	-	-	-	<0.036	-	20	20	20	300
Nickel	-	-	-	-	-	-	-	-	-	-	-	-	-	600	600	20	10,000
Silver	-	-	-	**0.75**	-	-	-	<0.64	-	-	-	<0.59	-	100	100	100	2,000
Vanadium	-	-	-	-	-	-	-	-	-	-	-	-	-	400	400	400	7,000
Zinc	-	-	-	-	-	-	-	-	-	-	-	-	-	1,000	1,000	1000	10,000

NOTES:

-- is analysis not performed or not applicable
mg/kg is milligrams per kilogram
ND is not detected
PID is photoionization detector
ppmv is parts per million by volume

EPC is Exposure Point Concentration
BDL is below the PID detection limit of 0.5 ppmv
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Analytes detected above the method reporting limit are in **Bold**
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EPC is based on the arithmetic mean of soil concentrations within the Exposure Point Boundaries
Samples included in EPC calculations are those that are indicative of current conditions within the Disposal Site boundary
Using the average as the soil EPC is appropriate because the statistical dataset is normally distributed on a log scale; therefore, using the average does not underestimate risk

TABLE 10

SUMMARY OF SOIL EXPOSURE POINT CONCENTRATIONS: 0 - 15 FEET BELOW SURFACE GRADE

Maggiore Somerville
343-351 Summer Street
Somerville, Massachusetts

Sample Date							March 28, 2017							MCP Method 1 Soil Standards (mg/kg)		MCP Reportable Concentrations (mg/kg)	MCP Method 3 Upper Concentration Limits (mg/kg)
Sample ID	PC-6 10-15'	PC-6 5-10'	PC-7 0-15' COMP	PC-7 0-5'	PC-7 10-15'	PC-7 5-10'	PC-8 0-15' COMP	PC-8 0-5'	PC-8 10-15'	PC-8 5-10'	PC-9 0-15' COMP	PC-9 0-5'	PC-9 10-15'	S-1		RCS-1	
Depth (feet)	10-15	5-10	0-15	0-5	10-15	5-10	0-15	0-5	10-15	5-10	0-15	0-5	10-15	GW-2	GW-3		
PID (ppmv)	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL				
VOLATILE ORGANIC COMPOUNDS (mg/kg)																	
Acetone	–	–	**0.0242**	--	--	–	**0.0235**	–	--	--	<0.0096	–	–	50	400	6	10,000
Naphthalene	–	–	<0.0056	--	--	–	<0.0052	–	--	--	<0.0048	–	–	20	500	4	10,000
m,p-Xylene	–	–	<0.0022	--	--	–	<0.0021	–	--	--	<0.0019	–	–	100	500	100	10,000
o-Xylene	–	–	<0.0022	--	--	–	<0.0021	–	--	--	<0.0019	--	–	100	500	100	10,000
Xylene (total)	–	--	<0.0022	--	--	–	<0.0021	–	--	--	<0.0019	–	–	100	500	100	10,000
SEMI-VOLATILE ORGANIC COMPOUNDS 8270D (mg/kg)																	
Acenaphthene	–	–	<0.12	--	--	–	**0.213**	–	--	--	<0.12	–	–	1000	1000	4	10,000
Acenaphthylene	–	–	<0.12	--	--	–	<0.11	–	--	--	<0.12	–	–	600	10	1	10,000
Anthracene	–	–	<0.12	--	--	–	**0.49**	–	--	--	**0.122**	–	–	1000	1000	1000	10,000
Benzo(a)anthracene	–	–	<0.12	--	--	–	**1.32**	–	--	--	**0.413**	–	–	7	7	7	3,000
Benzo(a)pyrene	–	–	<0.29	--	--	–	**1.27**	–	--	--	**0.43**	–	–	2	2	2	300
Benzo(b)fluoranthene	–	–	<0.12	--	--	–	0.981	–	--	--	**0.368**	–	–	7	7	7	3,000
Benzo(g,h,i)perylene	–	–	<0.12	--	--	–	**0.7**	–	--	--	**0.303**	–	–	1000	1000	1000	10,000
Benzo(k)fluoranthene	–	–	<0.12	--	--	–	**0.979**	–	--	--	**0.355**	–	–	70	70	70	10,000
Chrysene	–	–	<0.12	--	--	–	**1.22**	–	--	--	**0.398**	–	–	70	70	70	10,000
Dibenzo(a,h)anthracene	–	–	<0.12	--	--	–	**0.235**	–	--	--	<0.12	–	–	0.7	0.7	0.7	300
Dibenzofuran	–	–	<0.12	--	--	–	**0.113**	–	--	--	<0.12	–	–	NE	NE	100	NE
Fluoranthene	–	–	**0.254**	--	--	–	**2.94**	–	--	--	**0.712**	–	–	1000	1000	1000	10,000
Fluorene	–	–	<0.12	--	--	–	**0.158**	–	--	--	<0.12	–	–	1000	1000	1000	10,000
Indeno(1,2,3-cd)pyrene	–	–	<0.29	--	--	–	**0.812**	–	--	--	**0.309**	–	–	7	7	7	3,000
2-Methylnaphthalene	–	–	<0.12	--	--	–	<0.11	–	--	--	<0.12	–	–	80	300	0.7	5,000
Naphthalene	–	–	<0.12	--	--	–	<0.11	–	--	--	<0.12	–	–	20	500	4	10,000
Phenanthrene	–	–	**0.136**	--	--	–	**2.29**	–	--	--	**0.388**	–	–	500	500	10	10,000
Pyrene	–	–	**0.238**	--	--	--	**2.74**	–	--	--	**0.725**	–	–	1000	1000	1000	10,000
PESTICIDES 8081B (mg/kg)																	
4,4'-DDT	–	–	<0.0058	--	--	–	**0.0067**	–	--	--	<0.0058	–	–	6	6	6	600
TOTAL PETROLEUM HYDROCARBONS - DIESEL RANGE ORGANICS 8015 (mg/kg)																	
TPH-DRO (Semi-VOA)	-	-	ND (19)	-	-	-	**18.8**	-	-	-	**39.3**	-	-	NE	NE	NE	NE
TOTAL METALS (mg/kg)																	
Arsenic	-	-	**9.2**	-	-	-	**9**	-	-	-	**14.4**	-	-	20	20	20	500
Barium	-	-	**56.2**	-	-	-	**51.5**	-	-	-	**86.8**	-	-	1,000	1,000	1000	10,000
Beryllium	-	-	-	-	-	-	-	-	-	-	-	-	-	90	90	90	2,000
Chromium	-	-	23	-	-	-	**23.4**	-	-	-	**28.9**	-	-	100	100	100	2,000
Lead	**10**	**2.5**	**40.7**	**156**	**5.7**	**4.2**	**40.2**	**104**	**12.9**	**2.9**	**31.6**	**26.2**	**11.5**	200	200	200	6,000
Mercury	-	-	**0.099**	-	-	-	**0.14**	-	-	-	**3.3**	-	-	20	20	20	300
Nickel	-	-	-	-	-	-	-	-	-	-	-	-	-	600	600	20	10,000
Silver	-	-	**2.5**	-	-	-	**2.4**	-	-	-	**2.6**	-	-	100	100	100	2,000
Vanadium	-	-	-	-	-	-	-	-	-	-	-	-	-	400	400	400	7,000
Zinc	-	-	-	-	-	-	-	-	-	-	-	-	-	1,000	1,000	1000	10,000

NOTES:

– is analysis not performed or not applicable
mg/kg is milligrams per kilogram
ND is not detected
PID is photoionization detector
ppmv is parts per million by volume

EPC is Exposure Point Concentration
BDL is below the PID detection limit of 0.5 ppmv
<2.0 is not detected at or above the laboratory detection limit of 2.0 mg/kg
Analytes detected above the method reporting limit are in **Bold**
Analytes detected above applicable MCP Soil Standards are in Red

EPC is based on the arithmetic mean of soil concentrations within the Exposure Point Boundaries
Samples included in EPC calculations are those that are indicative of current conditions within the Disposal Site boundary
Using the average as the soil EPC is appropriate because the statistical dataset is normally distributed on a log scale; therefore, using the average does not underestimate risk

TABLE 10

SUMMARY OF SOIL EXPOSURE POINT CONCENTRATIONS: 0 - 15 FEET BELOW SURFACE GRADE

Maggiore Somerville
343-351 Summer Street
Somerville, Massachusetts

Sample Date	March 28, 2017												MCP Method 1 Soil Standards (mg/kg)		MCP Reportable Concentrations (mg/kg)	MCP Method 3 Upper Concentration Limits (mg/kg)
Sample ID	PC-9 5-10'	PC-10 0-15' COMP	PC-10 0-5'	PC-10 10-15'	PC-10 5-10'	PC-11 0-15' COMP	PC-11 0-5'	PC-11 10-15'	PC-11 5-10'	PC-12 0-15' COMP	PC-12 0-5'	PC-12 10-15'	S-1		RCS-1	
Depth (feet)	5-10	0-15	0-5	10-15	5-10	0-15	0-5	10-15	5-10	0-15	0-5	10-15				
PID (ppmv)	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	GW-2	GW-3		
VOLATILE ORGANIC COMPOUNDS (mg/kg)																
Acetone	–	**0.044**	–	–	–	**0.0338**	–	–	–	**0.113**	–	–	50	400	6	10,000
Naphthalene	–	<0.0053	–	–	–	<0.0060	–	–	–	<0.0057	–	–	20	500	4	10,000
m,p-Xylene	–	<0.0021	–	–	–	<0.0024	–	–	–	<0.0023	–	–	100	500	100	10,000
o-Xylene	–	<0.0021	–	–	–	<0.0024	–	–	–	<0.0023	–	–	100	500	100	10,000
Xylene (total)	–	<0.0021	–	–	–	<0.0024	–	–	–	<0.0023	–	–	100	500	100	10,000
SEMI-VOLATILE ORGANIC COMPOUNDS 8270D (mg/kg)																
Acenaphthene	–	<0.12	–	–	–	<0.11	–	–	–	<0.11	–	–	1000	1000	4	10,000
Acenaphthylene	–	**0.401**	–	–	–	<0.11	–	–	–	<0.11	–	–	600	10	1	10,000
Anthracene	–	**0.369**	–	–	–	<0.11	–	–	–	<0.11	–	–	1000	1000	1000	10,000
Benzo(a)anthracene	–	**1.29**	–	–	–	**0.123**	–	–	–	<0.11	–	–	7	7	7	3,000
Benzo(a)pyrene	–	**1.31**	–	–	–	<0.29	–	–	–	<0.29	–	–	2	2	2	300
Benzo(b)fluoranthene	–	**0.999**	–	–	–	<0.11	–	–	–	<0.11	–	–	7	7	7	3,000
Benzo(g,h,i)perylene	–	**0.788**	–	–	–	<0.11	–	–	–	<0.11	–	–	1000	1000	1000	10,000
Benzo(k)fluoranthene	–	**1.08**	–	–	–	**0.117**	–	–	–	<0.11	–	–	70	70	70	10,000
Chrysene	–	**1.18**	–	–	–	**0.118**	–	–	–	**0.115**	–	–	70	70	70	10,000
Dibenzo(a,h)anthracene	–	**0.255**	–	–	–	<0.11	–	–	–	<0.11	–	–	0.7	0.7	0.7	300
Dibenzofuran	–	<0.12	–	–	–	<0.11	–	–	–	<0.11	–	–	NE	NE	100	NE
Fluoranthene	–	**2.21**	–	–	–	**0.115**	–	–	–	**0.222**	–	–	1000	1000	1000	10,000
Fluorene	–	**0.142**	–	–	–	<0.11	–	–	–	<0.11	–	–	1000	1000	1000	10,000
Indeno(1,2,3-cd)pyrene	–	**0.881**	–	–	–	<0.29	–	–	–	<0.29	–	–	7	7	7	3,000
2-Methylnaphthalene	–	<0.12	–	–	–	<0.11	–	–	–	<0.11	–	–	80	300	0.7	5,000
Naphthalene	–	<0.12	–	–	–	<0.11	–	–	–	<0.11	–	–	20	500	4	10,000
Phenanthrene	–	**1.12**	–	–	–	<0.11	–	–	–	**0.127**	–	–	500	500	10	10,000
Pyrene	–	**1.99**	–	–	–	**0.123**	–	–	–	**0.209**	–	–	1000	1000	1000	10,000
PESTICIDES 8081B (mg/kg)																
4,4'-DDT	–	<0.0057	–	–	–	<0.0057	–	–	–	<0.0059	–	–	6	6	6	600
TOTAL PETROLEUM HYDROCARBONS - DIESEL RANGE ORGANICS 8015 (mg/kg)																
TPH-DRO (Semi-VOA)	-	**52.2**	-	-	-	**36.3**	-	-	-	**50**	-	-	NE	NE	NE	NE
TOTAL METALS (mg/kg)																
Arsenic	-	**11.3**	-	-	-	**3.2**	-	-	-	**7.2**	-	-	20	20	20	500
Barium	-	**105**	-	-	-	**28.1**	-	-	-	**61.7**	-	-	1,000	1,000	1000	10,000
Beryllium	-	-	-	-	-	-	-	-	-	-	-	-	90	90	90	2,000
Chromium	-	**45.5**	-	-	-	**12.9**	-	-	-	**13.9**	-	-	100	100	100	2,000
Lead	**28.2**	**19**	**28.60**	**12.2**	**8.7**	**17.9**	**15.4**	**7.4**	**10.5**	**238**	**138**	**4.1**	200	200	200	6,000
Mercury	-	**0.084**	-	-	-	**0.045**	-	-	-	**0.17**	-	-	20	20	20	300
Nickel	-	-	-	-	-	-	-	-	-	-	-	-	600	600	20	10,000
Silver	-	**2.7**	-	-	-	<0.58	-	-	-	<0.57	-	-	100	100	100	2,000
Vanadium	-	-	-	-	-	-	-	-	-	-	-	-	400	400	400	7,000
Zinc	-	-	-	-	-	-	-	-	-	-	-	-	1,000	1,000	1000	10,000

NOTES:

– is analysis not performed or not applicable
mg/kg is milligrams per kilogram
ND is not detected
PID is photoionization detector
ppmv is parts per million by volume

EPC is Exposure Point Concentration
BDL is below the PID detection limit of 0.5 ppmv
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TABLE 10

SUMMARY OF SOIL EXPOSURE POINT CONCENTRATIONS: 0 - 15 FEET BELOW SURFACE GRADE

Maggiore Somerville
343-351 Summer Street
Somerville, Massachusetts

Sample Date	March 28, 2017												**MCP Method 1 Soil Standards (mg/kg)**		**MCP Reportable Concentrations (mg/kg)**	**MCP Method 3 Upper Concentration Limits (mg/kg)**
Sample ID	PC-12 5-10'	PC-13 0-15 'COMP	PC-13 0-5'	PC-13 10-15'	PC-13 5-10'	PC-14 0-15' COMP	PC-14 0-5'	PC-14 10-15'	PC-14 5-10'	PC-15 0-15' COMP	PC-15 0-5'	PC-15 10-15'	S-1		RCS-1	
Depth (feet)	5-10	0-15	0-5	10-15	5-10	0-15	0-5	10-15	5-10	0-15	0-5	10-15	GW-2	GW-3		
PID (ppmv)	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL				
VOLATILE ORGANIC COMPOUNDS (mg/kg)																
Acetone	–	<0.011	–	–	–	**0.0377**	–	–	–	<0.013	–	–	50	400	6	10,000
Naphthalene	–	<0.0057	–	–	–	<0.0057	–	–	–	<0.0067	–	–	20	500	4	10,000
m,p-Xylene	–	**0.0039**	–	–	–	**0.0063**	–	–	–	**0.0045**	--	–	100	500	100	10,000
o-Xylene	–	<0.0023	–	–	--	**0.0026**	–	–	–	<0.0027	--	–	100	500	100	10,000
Xylene (total)	–	**0.0055**	–	–	–	**0.0089**	–	–	–	**0.0063**	–	–	100	500	100	10,000
SEMI-VOLATILE ORGANIC COMPOUNDS 8270D (mg/kg)																
Acenaphthene	–	<0.12	–	–	--	<0.11	–	–	–	**0.756**	–	–	1000	1000	4	10,000
Acenaphthylene	–	<0.12	–	–	--	<0.11	–	–	–	<0.11	–	–	600	10	1	10,000
Anthracene	–	**0.133**	--	–	--	**0.154**	–	–	–	**1.75**	–	–	1000	1000	1000	10,000
Benzo(a)anthracene	–	**0.512**	–	–	--	**0.384**	–	–	–	**4.83**	–	–	7	7	7	3,000
Benzo(a)pyrene	–	**0.539**	–	–	--	**0.384**	–	–	–	**5.22**	–	–	2	2	2	300
Benzo(b)fluoranthene	–	**0.413**	–	–	--	**0.283**	–	–	–	**4.09**	--	–	7	7	7	3,000
Benzo(g,h,i)perylene	–	**0.304**	–	–	–	**0.217**	–	–	–	**2.86**	–	–	1000	1000	1000	10,000
Benzo(k)fluoranthene	–	**0.416**	–	–	–	**0.291**	–	–	–	**3.45**	–	–	70	70	70	10,000
Chrysene	–	**0.509**	–	–	–	**0.348**	–	–	–	**4.65**	--	–	70	70	70	10,000
Dibenzo(a,h)anthracene	–	<0.12	–	–	–	<0.11	–	–	–	**1.05**	–	–	0.7	0.7	0.7	300
Dibenzofuran	–	<0.12	–	–	–	<0.11	–	–	–	**0.294**	--	–	NE	NE	100	NE
Fluoranthene	–	**1.02**	--	–	–	**0.882**	–	–	–	**10.7**	–	–	1000	1000	1000	10,000
Fluorene	–	<0.12	–	–	–	<0.11	–	–	–	**0.537**	–	–	1000	1000	1000	10,000
Indeno(1,2,3-cd)pyrene	–	**0.335**	–	–	–	<0.28	–	–	–	**3.21**	--	–	7	7	7	3,000
2-Methylnaphthalene	–	<0.12	–	–	–	<0.11	–	–	–	**0.133**	–	–	80	300	0.7	5,000
Naphthalene	–	<0.12	–	–	–	<0.11	–	–	–	**0.158**	–	–	20	500	4	10,000
Phenanthrene	–	**0.579**	–	–	–	**0.624**	–	–	–	**7.19**	–	–	500	500	10	10,000
Pyrene	–	**0.955**	–	–	–	**0.759**	–	–	–	**10.1**	--	–	1000	1000	1000	10,000
PESTICIDES 8081B (mg/kg)																
4,4'-DDT	–	<0.0056	--	–	--	<0.0056	–	–	–	<0.0058	–	–	6	6	6	600
TOTAL PETROLEUM HYDROCARBONS - DIESEL RANGE ORGANICS 8015 (mg/kg)																
TPH-DRO (Semi-VOA)	-	**41.9**	-	-	-	**33.3**	-	-	-	**976**	-	-	NE	NE	NE	NE
TOTAL METALS (mg/kg)																
Arsenic	-	**3.5**	-	-	-	**2.5**	-	-	-	**5.4**	-	-	20	20	20	500
Barium	-	**36.5**	-	-	-	**16.3**	-	-	-	**59.1**	-	-	1,000	1,000	1000	10,000
Beryllium	-	-	-	-	-	-	-	-	-	-	-	-	90	90	90	2,000
Chromium	-	**12.6**	-	-	-	**8.2**	-	-	-	**20.1**	-	-	100	100	100	2,000
Lead	488	**71.7**	340	**4.8**	**62.3**	**22.8**	**23.9**	**2.4**	**59.8**	**72.6**	**197**	**3.2**	200	200	200	6,000
Mercury	-	**0.6**	-	-	-	**0.11**	-	-	-	**0.2**	-	-	20	20	20	300
Nickel	-	-	-	-	-	-	-	-	-	-	-	-	600	600	20	10,000
Silver	-	<0.58	-	-	-	<0.59	-	-	-	<0.59	-	-	100	100	100	2,000
Vanadium	-	-	-	-	-	-	-	-	-	-	-	-	400	400	400	7,000
Zinc	-	-	-	-	-	-	-	-	-	-	-	-	1,000	1,000	1000	10,000

NOTES:

– is analysis not performed or not applicable
mg/kg is milligrams per kilogram
ND is not detected
PID is photoionization detector
ppmv is parts per million by volume

EPC is Exposure Point Concentration
BDL is below the PID detection limit of 0.5 ppmv
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TABLE 10
SUMMARY OF SOIL EXPOSURE POINT CONCENTRATIONS: 0 - 15 FEET BELOW SURFACE GRADE

Maggiore Somerville
343-351 Summer Street
Somerville, Massachusetts

Sample Date	March 28, 2017									MCP Method 1 Soil Standards (mg/kg)		MCP Reportable Concentrations (mg/kg)	MCP Method 3 Upper Concentration Limits (mg/kg)	Minimum Detection	Maximum Detection	Mean Concentration	Median Concentration	EPC
Sample ID	PC-15 5-10'	PC-16 0-5' COMP	PC-16A 0-5'	PC-16B 0-5'	PC-16C 0-5'	PC-17 0-5' COMP	PC-17A 0-5'	PC-17B 0-5'	PC-17C 0-5'	S-1		RCS-1						
Depth (feet)	5-10	0-5	0-5	0-5	0-5	0-5	0-5	0-5	0-5									
PID (ppmv)	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	GW-2	GW-3							
VOLATILE ORGANIC COMPOUNDS (mg/kg)																		
Acetone	--	**0.0587**	--	--	--	**0.0686**	--	--	--	50	400	6	10,000	0.02	0.11	0.04	0.03	0.04
Naphthalene	--	<0.0061	--	--	--	**0.0117**	--	--	--	20	500	4	10,000	0.01	0.03	0.006	0.003	0.006
m,p-Xylene	--	**0.121**	--	--	--	<0.0023	--	--	--	100	500	100	10,000	0.004	0.121	0.010	0.001	0.010
o-Xylene	--	**0.0344**	--	--	--	<0.0023	--	--	--	100	500	100	10,000	0.003	0.034	0.004	0.001	0.004
Xylene (total)	--	**0.155**	--	--	--	<0.0023	--	--	--	100	500	100	10,000	0.006	0.155	0.012	0.001	0.012
SEMI-VOLATILE ORGANIC COMPOUNDS 8270D (mg/kg)																		
Acenaphthene	--	<0.12	--	--	--	**0.713**	--	--	--	1000	1000	4	10,000	0.2	1.1	0.3	0.1	0.3
Acenaphthylene	--	<0.12	--	--	--	**0.14**	--	--	--	600	10	1	10,000	0.1	2.7	0.3	0.1	0.3
Anthracene	--	<0.12	--	--	--	**1.43**	--	--	--	1000	1000	1000	10,000	0.1	5.5	1.0	0.3	1.0
Benzo(a)anthracene	--	**0.314**	--	--	--	**3.28**	--	--	--	7	7	7	3,000	0.1	11.6	2.6	1.3	2.6
Benzo(a)pyrene	--	**0.374**	--	--	--	**3.4**	--	--	--	2	2	2	300	0.4	9.0	2.4	1.3	2.4
Benzo(b)fluoranthene	--	**0.297**	--	--	--	**2.73**	--	--	--	7	7	7	3,000	0.3	9.0	2.1	0.9	2.1
Benzo(g,h,i)perylene	--	**0.256**	--	--	--	**1.72**	--	--	--	1000	1000	1000	10,000	0.2	5.2	1.3	0.7	1.3
Benzo(k)fluoranthene	--	**0.295**	--	--	--	**2.37**	--	--	--	70	70	70	10,000	0.1	5.7	1.6	0.9	1.6
Chrysene	--	**0.349**	--	--	--	**3.1**	--	--	--	70	70	70	10,000	0.1	10.2	2.5	1.1	2.5
Dibenzo(a,h)anthracene	--	<0.12	--	--	--	**0.651**	--	--	--	0.7	0.7	0.7	300	0.2	2.1	0.5	0.2	0.5
Dibenzofuran	--	<0.12	--	--	--	**0.368**	--	--	--	NE	NE	100	NE	0.1	2.1	0.3	0.1	0.3
Fluoranthene	--	**0.541**	--	--	--	**6.6**	--	--	--	1000	1000	1000	10,000	0.1	29.4	6.2	2.2	6.2
Fluorene	--	<0.12	--	--	--	**0.575**	--	--	--	1000	1000	1000	10,000	0.1	4.6	0.5	0.1	0.5
Indeno(1,2,3-cd)pyrene	--	<0.29	--	--	--	**1.88**	--	--	--	7	7	7	3,000	0.3	5.7	1.5	0.8	1.5
2-Methylnaphthalene	--	<0.12	--	--	--	**0.218**	--	--	--	80	300	0.7	5,000	0.1	0.5	0.1	0.1	0.1
Naphthalene	--	<0.12	--	--	--	**0.264**	--	--	--	20	500	4	10,000	0.2	0.7	0.1	0.1	0.1
Phenanthrene	--	**0.409**	--	--	--	**5.65**	--	--	--	500	500	10	10,000	0.1	33.5	4.9	1.0	4.9
Pyrene	--	**0.528**	--	--	--	**6.29**	--	--	--	1000	1000	1000	10,000	0.1	23.0	5.4	2.0	5.4
PESTICIDES 8081B (mg/kg)																		
4,4'-DDT	--	<0.0059	--	--	--	**0.0082**	--	--	--	6	6	6	600	0.01	1.00	0.005	0.003	0.005
TOTAL PETROLEUM HYDROCARBONS - DIESEL RANGE ORGANICS 8015 (mg/kg)																		
TPH-DRO (Semi-VOA)	-	**59**	-	-	-	**183**	-	-	-	NE	NE	NE	NE	18.8	976.0	115.7	40.6	115.7
TOTAL METALS (mg/kg)																		
Arsenic	-	**10.7**	-	-	-	**6.1**	-	-	-	20	20	20	500	1.5	14.4	7.3	6.6	7.3
Barium	-	**131**	-	-	-	**36.9**	-	-	-	1,000	1,000	1000	10,000	11.6	195.0	65.0	57.1	65.0
Beryllium	-	-	-	-	-	-	-	-	-	90	90	90	2,000	0.4	0.9	0.5	0.4	0.5
Chromium	-	**25.9**	-	-	-	**14.6**	-	-	-	100	100	100	2,000	8.2	46.5	23.5	21.6	23.5
Lead	**9.7**	**516**	**1270**	**1190**	**70**	**53.6**	**31.4**	**44.1**	**25.6**	200	200	200	6,000	2.4	1270	93.1	23.9	93.1
Mercury	-	**0.4**	-	-	-	**0.11**	-	-	-	20	20	20	300	0.05	3.3	0.4	0.1	0.4
Nickel	-	-	-	-	-	-	-	-	-	600	600	20	10,000	7.5	33.5	18.6	11.5	18.6
Silver	-	<0.61	-	-	-	<0.58	-	-	-	100	100	100	2,000	0.7	1.0	0.4	0.3	0.4
Vanadium	-	-	-	-	-	-	-	-	-	400	400	400	7,000	14.0	55.6	31.4	18.8	31.4
Zinc	-	-	-	-	-	-	-	-	-	1,000	1,000	1000	10,000	25.9	245.0	78.7	28.3	78.7

NOTES:

-- is analysis not performed or not applicable
mg/kg is milligrams per kilogram
ND is not detected
PID is photoionization detector
ppmv is parts per million by volume

EPC is Exposure Point Concentration
BDL is below the PID detection limit of 0.5 ppmv
<2.0 is not detected at or above the laboratory detection limit of 2.0 mg/kg
Analytes detected above the method reporting limit are in **Bold**
Analytes detected above applicable MCP Soil Standards are in Red

EPC is based on the arithmetic mean of soil concentrations within the Exposure Point Boundaries
Samples included in EPC calculations are those that are indicative of current conditions within the Disposal Site boundary
Using the average as the soil EPC is appropriate because the statistical dataset is normally distributed on a log scale; therefore, using the average does not underestimate risk

APPENDIX A

Method 3 Risk Assessment for Chemicals in Soil - Construction Worker Shortform 2012 (sf12cw)

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Tab	
EPCs	Table CW-1: Select chemicals and enter Exposure Point Concentrations (EPCs). Estimated risks are shown to the right.
C Eq	Table CW-2: Equations to calculate cancer risks
NC Eq	Table CW-3: Equations to calculate noncancer risks
Exp	Table CW-4: Definitions and exposure factors
Chem	Table CW-5: Chemical-specific data
Cyanide	Table CW-6: Cyanide Calculations

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Construction Worker - Soil: Table CW-1
Exposure Point Concentration (EPC) and Risk
Based on Construction Worker 18-25 years of age

ELCR (all chemicals) = 2.8E-07
HI (all chemicals) = 1.6E-01

****Do not insert or delete any rows****
Click on empty cell below and select OHM using arrow

Oil or Hazardous Material (OHM)	EPC (mg/kg)	ELCR ingestion	ELCR dermal	ELCR inhalation GI	ELCR inhalation pulmonary	$ELCR_{total}$	Subchronic HQ_{ing}	Subchronic HQ_{derm}	Subchronic HQ_{inh-GI}	Subchronic HQ_{inh}	HQ_{total}
ACETONE	4.0E-02						1.8E-08	5.5E-09	4.7E-10	1.9E-09	2.6E-08
XYLENES (Mixed Isomers)	1.2E+00						3.7E-06	1.1E-06	9.6E-08	1.1E-07	5.0E-06
ACENAPHTHENE	3.0E-01						5.5E-07	1.9E-06	1.4E-08	2.2E-08	2.5E-06
ACENAPHTHYLENE	3.0E-01						3.7E-07	1.2E-06	9.6E-09	2.2E-08	1.6E-06
ANTHRACENE	1.0E+00						3.7E-07	1.2E-06	9.6E-09	7.4E-08	1.7E-06
BENZO(a)ANTHRACENE	2.6E+00	5.0E-09	3.4E-09	1.3E-10	1.4E-10	8.6E-09	3.2E-06	2.2E-06	8.3E-08	1.9E-07	5.6E-06
BENZO(a)PYRENE	2.4E+00	4.6E-08	3.1E-08	1.2E-09	1.3E-09	8.0E-08	3.0E-06	2.0E-06	7.7E-08	1.8E-07	5.2E-06
BENZO(b)FLUORANTHENE	2.1E+00	4.0E-09	2.7E-09	1.0E-10	1.2E-10	7.0E-09	2.6E-06	1.7E-06	6.7E-08	1.6E-07	4.5E-06
BENZO(g,h,i)PERYLENE	1.3E+00						1.6E-06	5.4E-06	4.1E-08	9.7E-08	7.1E-06
BENZO(k)FLUORANTHENE	1.6E+00	3.1E-10	2.1E-10	8.0E-12	8.9E-12	5.3E-10	2.0E-06	1.3E-06	5.1E-08	1.2E-07	3.5E-06
CHRYSENE	2.5E+00	4.8E-10	3.2E-10	1.2E-11	1.4E-11	8.3E-10	3.1E-06	2.1E-06	8.0E-08	1.9E-07	5.4E-06
DIBENZO(a,h)ANTHRACENE	5.0E-01	9.6E-09	6.5E-09	2.5E-10	2.8E-10	1.7E-08	6.2E-07	4.1E-07	1.6E-08	3.7E-08	1.1E-06
FLUORANTHENE	6.2						2.3E-05	7.7E-05	5.9E-07	4.6E-07	1.0E-04
FLUORENE	0.5						4.6E-07	1.6E-06	1.2E-08	3.7E-08	2.1E-06
INDENO(1,2,3-cd)PYRENE	1.5	2.9E-09	1.9E-09	7.5E-11	8.3E-11	5.0E-09	1.8E-06	1.2E-06	4.8E-08	1.1E-07	3.2E-06
METHYLNAPHTHALENE, 2-	0.1						9.2E-06	3.1E-05	2.4E-07	7.4E-09	4.0E-05
NAPHTHALENE	0.1						1.8E-07	6.2E-07	4.8E-09	1.2E-06	2.1E-06
PHENANTHRENE	4.9						6.0E-06	2.0E-05	1.6E-07	3.6E-07	2.7E-05
PYRENE	5.4						6.7E-06	2.2E-05	1.7E-07	4.0E-07	3.0E-05
ARSENIC	7.3	4.8E-08	2.9E-08	1.2E-09	5.8E-09	8.4E-08	1.5E-02	9.1E-03	3.9E-04	1.4E-02	3.8E-02
BARIUM	65						1.1E-03	1.2E-03	3.0E-05	4.8E-04	2.8E-03
BERYLLIUM	0.5				3.2E-10	3.2E-10	1.2E-04	1.2E-04	3.2E-06	9.3E-04	1.2E-03
CHROMIUM (TOTAL)	23.5				7.5E-08	7.5E-08	1.4E-03	1.5E-03	3.8E-05	2.9E-03	5.9E-03
LEAD	93.1						7.6E-02	9.2E-03	2.0E-03	3.5E-03	9.1E-02
MERCURY	0.4						8.2E-04	1.7E-03	2.1E-05	5.0E-05	2.5E-03
NICKEL	18.6				2.4E-09	2.4E-09	1.1E-03	2.3E-03	3.0E-05	6.9E-04	4.2E-03
SILVER	0.4						9.9E-05	3.0E-04	2.6E-06	1.1E-04	5.1E-04
VANADIUM	31.4						4.3E-03	4.3E-03	1.1E-04	1.2E-03	9.9E-03
ZINC	78.7						3.2E-04	3.3E-04	8.4E-06	2.1E-03	2.8E-03

Note! Cr(VI) limit is 200 mg/kg due to contact dermititis.

Construction Worker - Soil: Table CW-2
Equations to Calculate Cancer Risk for Construction Worker

Cancer Risk from Ingestion

$$ELCR_{ing} = LADD_{ing} * CSF_{oral}$$

$$LADD_{ing} = \frac{EPC * IR * RAF_{c\text{-}ing} * EF * ED_{ing} * EP * C1}{BW * AP_{lifetime}}$$

Cancer Risk from Dermal Absorption

$$ELCR_{derm} = LADD_{derm} * CSF_{oral}$$

$$LADD_{derm} = \frac{EPC * SA * AF * RAF_{c\text{-}derm} * EF * ED_{derm} * EP * C1}{BW * AP_{lifetime}}$$

Cancer Risk from Particulate Inhalation - Gastrointestinal Absorption

$$ELCR_{inh\text{-}GI} = LADD_{inh\text{-}GI} * CSF_{oral}$$

$$LADD_{inh\text{-}GI} = \frac{EPC * RCAF_{inh\text{-}gi} * PM_{10} * VR_{work} * RAF_{c\text{-}ing} * EF * ED_{inh} * EP * C2 * C3 * C4}{BW * AP_{lifetime}}$$

Cancer Risk from Particulate Inhalation - Pulmonary Absorption

$$ELCR_{inh} = LADD_{inh} * CSF_{inhalation}$$

$$LADD = \frac{EPC * RCAF_{inh} * PM_{10} * VR_{work} * RAF_{c\text{-}inh} * EF * ED_{inh} * EP * C2 * C3 * C4}{BW * AP_{lifetime}}$$

Parameter	Value	Units
CSF	OHM-specific	$(mg/kg\text{-}day)^{-1}$
LADD	age/OHM-specific	mg/kg-day
EPC	OHM-specific	mg/kg
IR	100	mg/day
$RAF_{c\text{-}ing}$	OHM-specific	dimensionless
$RAF_{c\text{-}derm}$	OHM-specific	dimensionless
$RAF_{c\text{-}inh}$	OHM-specific	dimensionless
EF	0.714	event/day
$ED_{ing\ \&\ derm}$	1	day/event
ED_{inh}	0.333	day/event
EP	182	days
C1	1.0E-06	kg/mg
C2	1.0E-09	kg/µg
C3	1440	min/days
C4	1.0E-03	m^3/L
BW	58.0	kg
$AP_{(lifetime)}$	25,550	days
VR_{work}	60	L/min
AF	0.29	mg/cm^2
SA	3473	cm^2/day
$RCAF_{inh\text{-}gi}$	1.5	dimensionless
$RCAF_{inh}$	0.5	dimensionless
PM_{10}	60	$\mu g/m^3$

Construction Worker - Soil: Table CW-3
Equations to Calculate Noncancer Risk for Construction Worker

Vlookup Version v0315

Noncancer Risk from Ingestion

$$HQ_{ing} = \frac{ADD_{ing}}{RfD_{oral\text{-}subchronic}}$$

$$ADD_{ing} = \frac{EPC * IR * RAF_{nc\text{-}ing} * EF * ED_{ing} * EP * C1}{BW * AP_{noncancer}}$$

Noncancer Risk from Dermal Absorption

$$HQ_{derm} = \frac{ADD_{derm}}{RfD_{oral\text{-}subchronic}}$$

$$ADD_{dermal} = \frac{EPC * SA * AF * RAF_{nc\text{-}derm} * EF * ED_{dermal} * EP * C1}{BW * AP_{noncancer}}$$

Noncancer Risk from Particulate Inhalation - Gastrointestinal Absorption

$$HQ_{inh\text{-}GI} = \frac{ADD_{inh\text{-}GI}}{RfD_{oral\text{-}subchronic}}$$

$$ADD_{inh\text{-}GI} = \frac{EPC * RCAF_{inh\text{-}gi} * PM_{10} * VR_{work} * RAF_{nc\text{-}ing} * EF * ED_{inh} * EP * C2 * C3 * C4}{BW * AP_{noncancer}}$$

Noncancer Risk from Particulate Inhalation - Pulmonary Absorption

$$HQ_{inh} = \frac{ADD}{RfD_{inhalation\text{-}subchronic}}$$

$$ADD_{inh} = \frac{EPC_{soil} * RCAF_{inh} * PM_{10} * VR_{work} * RAF_{nc\text{-}inh} * EF * ED_{inh} * EP * C2 * C3 * C4}{BW * AP_{noncancer}}$$

Parameter	Value	Units
RfD	OHM-specific	mg/kg-day
ADD	OHM-specific	mg/kg-day
EPC	OHM-specific	mg/kg
IR	100	mg/day
$RAF_{nc\text{-}ing}$	OHM-specific	dimensionless
$RAF_{nc\text{-}derm}$	OHM-specific	dimensionless
$RAF_{nc\text{-}inh}$	OHM-specific	dimensionless
EF	0.714	event/day
$ED_{ing\ \&\ derm}$	1	day/event
ED_{inh}	0.333	day/event
EP	182	days
C1	1.0E-06	kg/mg
C2	1.0E-09	kg/µg
C3	1440	min/days
C4	1.0E-03	m^3/L
BW	58.0	kg
$AP_{noncancer}$	182	days
VR_{work}	60	L/min
AF	0.29	mg/cm^2
SA	3473	cm^2/day
$RCAF_{inh\text{-}gi}$	1.5	dimensionless
$RCAF_{inh}$	0.5	dimensionless
PM10	60	$\mu g/m^3$

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Construction Worker - Soil: Table CW-4
Definitions and Exposure Factors

Parameter	Value	Units	Notes
ELCR - Excess Lifetime Cancer Risk	chemical specific	dimensionless	Pathway specific (ing =ingestion, derm=dermal, inh=inhalation)
HI - Hazard Index	chemical specific	dimensionless	Pathway specific (ing =ingestion, derm=dermal, inh=inhalation)
CSF - Cancer Slope Factor	chemical specific	$(mg/kg\text{-}day)^{-1}$	see Table CW-5.
RfD - Reference Dose	chemical specific	mg/kg-day	see Table CW-5.
LADD - Lifetime Average Daily Dose	chemical specific	mg/kg-day	Pathway specific. See Table CW-2.
ADD - Average Daily Dose	chemical specific	mg/kg-day	Pathway specific. See Table CW-3.
EPC - Exposure Point Concentration	chemical specific	mg/kg	see Table CW-1.
IR - Soil Ingestion Rate	100	mg/day	MADEP. 2002. Technical Update: Calculation of an Enhanced Soil Ingestion Rate. (http://www.mass.gov/dep/ors/orspubs.htm).
RAF_c - Relative Absorption Factor for Cancer Effects	chemical specific	dimensionless	Pathway specific - see Table CW-5.
RAF_{nc} - Relative Absorption Factor for Noncancer Effects	chemical specific	dimensionless	Pathway specific - see Table CW-5.
EF - Exposure Frequency	0.714	event/day	5 events (days) / 7 events (days) in a week; MADEP 1995 Guidance for Disposal Site Risk Characterization pg B-38.
$ED_{ing,derm}$ - Exposure Duration for ingestion or dermal exposure	1	day/event	
ED_{inh} - Exposure Duration for inhalation exposure	0.333	day/event	Represents 8 hours / event.
EP - Exposure Period	182	days	6 months; MADEP 1995 Guidance for Disposal Site Risk Characterization.
BW - Body Weight	58.0	kg	U.S. EPA. 1997. Exposure Factors Handbook. Table 7-7, Females, ages 18 - 25.
$AP_{(lifetime)}$ - Averaging Period for lifetime	25,550	days	Represents 70 years
$AP_{(noncancer)}$ - Averaging Period for noncancer	182	days	6 months; MADEP 1995 Guidance for Disposal Site Risk Characterization.
AF - Adherence Factor	0.29	mg/cm^2	MA DEP. 2002 Technical Update: Weighted Skin-Soil Adherence Factors. (http://www.mass.gov/dep/ors/orspubs.htm)
VR_{work} - Ventilation Rate during work (heavy exertion)	60	L/min	Table B-4 MADEP 1995 Guidance for Disposal Site Risk Characterization.
SA - Surface Area	3473	cm^2/day	MADEP. 1995. Guidance for Disposal Site Risk Characterization. 50th percentile for females. Appendix Table B-2.
$IFAF_{inh\text{-}gi}$ - Ingestion Fraction Adjustment Factor, gastrointestinal	1.5	dimensionless	MADEP 2007. Characterization of Risks Due to Inhalation of Particulates by Construction Workers
$IFAF_{inh}$ - Inhalation Fraction Adjustment Factor, inhalation	0.5	dimensionless	MADEP 2002. Characterization of Risks Due to Inhalation of Particulates by Construction Workers
PM10 - Concentration of PM_{10}	60	$\mu g/m^3$	MADEP 1995 Guidance for Disposal Site Risk Characterization pg B-11

Construction Worker - Soil: Table CW-5
Chemical-Specific Data

Oil or Hazardous Material	Oral CSF $(mg/kg\text{-}day)^{-1}$	$RAF_{c\text{-}ing}$	$RAF_{c\text{-}derm}$	$RAF_{c\text{-}inh}$	Inhalation CSF $(mg/kg\text{-}day)^{-1}$	Subchronic Oral RfD mg/kg-day	Subchronic $RAF_{nc\text{-}ing}$	Subchronic $RAF_{nc\text{-}derm}$	Subchronic $RAF_{nc\text{-}inh}$	Subchronic Inhalation RfD
ACETONE						2.7E+00	1	0.03	1	2.3E-01
XYLENES (Mixed Isomers)						4.0E-01	1	0.03	1	1.1E-01
ACENAPHTHENE						2.0E-01	0.3	0.1	1	1.4E-01
ACENAPHTHYLENE						3.0E-01	0.3	0.1	1	1.4E-01
ANTHRACENE						1.0E+00	0.3	0.1	1	1.4E-01
BENZO(a)ANTHRACENE	7.3E-01	0.3	0.02	1	7.3E-01	3.0E-01	0.3	0.02	1	1.4E-01
BENZO(a)PYRENE	7.3E+00	0.3	0.02	1	7.3E+00	3.0E-01	0.3	0.02	1	1.4E-01
BENZO(b)FLUORANTHENE	7.3E-01	0.3	0.02	1	7.3E-01	3.0E-01	0.3	0.02	1	1.4E-01
BENZO(g,h,i)PERYLENE						3.0E-01	0.3	0.1	1	1.4E-01
BENZO(k)FLUORANTHENE	7.3E-02	0.3	0.02	1	7.3E-02	3.0E-01	0.3	0.02	1	1.4E-01
CHRYSENE	7.3E-02	0.3	0.02	1	7.3E-02	3.0E-01	0.3	0.02	1	1.4E-01
DIBENZO(a,h)ANTHRACENE	7.3E+00	0.3	0.02	1	7.3E+00	3.0E-01	0.3	0.02	1	1.4E-01
FLUORANTHENE						1.0E-01	0.3	0.1	1	1.4E-01
FLUORENE						4.0E-01	0.3	0.1	1	1.4E-01
INDENO(1,2,3-cd)PYRENE	7.3E-01	0.3	0.02	1	7.3E-01	3.0E-01	0.3	0.02	1	1.4E-01
METHYLNAPHTHALENE, 2-						4.0E-03	0.3	0.1	1	1.4E-01
NAPHTHALENE						2.0E-01	0.3	0.1	1	8.6E-04
PHENANTHRENE						3.0E-01	0.3	0.1	1	1.4E-01
PYRENE						3.0E-01	0.3	0.1	1	1.4E-01
ARSENIC	1.5E+00	0.5	0.03	1	1.1E+01	3.0E-04	0.5	0.03	1	5.7E-06
BARIUM						7.0E-02	1	0.1	1	1.4E-03
BERYLLIUM					8.4E+00	5.0E-03	1	0.1	1	5.7E-06
CHROMIUM (TOTAL)					4.2E+01	2.0E-02	1	0.1	1	8.6E-05
LEAD						7.5E-04	0.5	0.006	1	2.9E-04
MERCURY						3.0E-04	0.5	0.1	1	8.6E-05
NICKEL					1.7E+00	2.0E-02	1	0.2	1	2.9E-04
SILVER						5.0E-03	1	0.3	1	4.0E-05
VANADIUM						9.0E-03	1	0.1	1	2.9E-04

Construction Worker - Soil: Table CW-6
Cyanide Calculations

The soil cyanide concentration limit set to protect a construction worker against an acute, potentially lethal one-time dose of cyanide from incidental ingestion of contaminated soil is 12,000 mg/kg_{soil}. This is the concentration of available cyanide in soil below which acute human health effects would not be expected following a one-time exposure. This soil concentration is calculated using the equation below with a one-time soil ingestion estimate of 50 mg_{soil} and an available cyanide dose limit of 0.01 $mg/kg_{body\ weight}$.

MassDEP's guidance on evaluating the risk from a one-time cyanide dose considers cyanide's potentially lethal effects as well as information on cyanide metabolism:

> Cyanides are detoxified rapidly by the body, and a large acute dose which overwhelms the detoxification mechanism is potentially more toxic than the same dose distributed over a period of hours. (MassDEP *Background Documentation for the Development of an Available Cyanide Benchmark Concentration,* originally dated October 1992, Modified August 1998)

Assessment of a potential one-time dose requires an estimate of the maximum soil concentration the trespasser could contact at any one time. The average soil concentration within a typical exposure area will underestimate the potential one-time dose. Therefore, to assess the acute risk of a one-time potentially lethal dose, the EPC for cyanide should be a conservative estimate of the maximum concentration.

The construction worker soil concentration limit to protect against adverse effects from an acute (one-time) exposure to cyanide is 12,000 mg/kg.

Acute Concentration Calculation for Cyanide

$$\text{Concentration} = \frac{\text{HQ x Acute Dose Limit x BW}}{\text{IR x RAF x Conversion Factor}}$$

Parameter	Value	Units
HQ (Hazard Quotient)	1	(unitless)
Acute Dose Limit	0.01	mg avail. CN/ kg BW
BW (Body Weight) 11-12	58	kg
IR (1-time reasonable max)	50	mg
Conversion Factor	1.0E-06	kg soil / mg soil
RAF	1	(unitless)

The toxicological basis for estimating an allowable one-time dose is documented in MassDEP's 1992 *Background Documentation for the Development of an "Available Cyanide" Benchmark Concentration,* which is published at: http://www.mass.gov/eea/docs/dep/toxics/stypes/dscyanide.pdf

Method 3 Risk Assessment for Resident Exposed to Chemicals in Soil - Shortform 2012 (sf12rs)

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Resident - Soil: Table RS-1
Exposure Point Concentration (EPC)
Based on Resident Ages 1-31 (Cancer), 1-8 (Chronic Noncancer), and 1-2 (Subchronic Noncancer)

ELCR (all chemicals) = 8.3E-06
Chronic HI (all chemicals) = 2.8E-01
Subchronic HI (all chemicals) = 6.4E-01

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Oil or	EPC			Derm & Ing	Chronic		Derm & Ing	Subchronic		Derm & Ing
Hazardous Material	**(mg/kg)**	**$ELCR_{ingestion}$**	**$ELCR_{dermal}$**	**$ELCR_{total}$**	**HQ_{ing}**	**HQ_{derm}**	**HQ_{total}**	**HQ_{ing}**	**HQ_{derm}**	**HQ_{total}**
ACETONE	4.0E-02				1.1E-07	2.7E-08	1.4E-07	9.9E-08	1.7E-08	1.2E-07
XYLENES (Mixed Isomers)	1.2E+00				1.5E-05	3.7E-06	1.8E-05	2.0E-05	3.5E-06	2.4E-05
ACENAPHTHENE	3.0E-01				3.6E-06	1.0E-05	1.4E-05	3.0E-06	5.9E-06	8.9E-06
ACENAPHTHYLENE	3.0E-01				7.3E-06	2.1E-05	2.8E-05	2.0E-06	3.9E-06	5.9E-06
ANTHRACENE	1.0E+00				2.4E-06	6.9E-06	9.3E-06	2.0E-06	3.9E-06	5.9E-06
BENZO(a)ANTHRACENE	2.6E+00	2.1E-07	1.5E-07	3.6E-07	6.3E-05	3.6E-05	9.9E-05	1.7E-05	6.8E-06	2.4E-05
BENZO(a)PYRENE	2.4E+00	2.0E-06	1.4E-06	3.3E-06	5.8E-05	3.3E-05	9.1E-05	1.6E-05	6.2E-06	2.2E-05
BENZO(b)FLUORANTHENE	2.1E+00	1.7E-07	1.2E-07	2.9E-07	5.1E-05	2.9E-05	8.0E-05	1.4E-05	5.5E-06	1.9E-05
BENZO(g,h,i)PERYLENE	1.3E+00				3.2E-05	8.9E-05	1.2E-04	8.7E-06	1.7E-05	2.6E-05
BENZO(k)FLUORANTHENE	1.6E+00	1.3E-08	9.1E-09	2.2E-08	3.9E-05	2.2E-05	6.1E-05	1.1E-05	4.2E-06	1.5E-05
CHRYSENE	2.5E+00	2.0E-08	1.4E-08	3.5E-08	6.1E-05	3.4E-05	9.5E-05	1.7E-05	6.5E-06	2.3E-05
DIBENZO(a,h)ANTHRACENE	5.0E-01	4.1E-07	2.8E-07	6.9E-07	1.2E-05	6.9E-06	1.9E-05	3.3E-06	1.3E-06	4.6E-06
FLUORANTHENE	6.2				1.1E-04	3.2E-04	4.3E-04	1.2E-04	2.4E-04	3.7E-04
FLUORENE	0.5				9.1E-06	2.6E-05	3.5E-05	2.5E-06	4.9E-06	7.4E-06
INDENO(1,2,3-cd)PYRENE	1.5	1.2E-07	8.5E-08	2.1E-07	3.6E-05	2.1E-05	5.7E-05	1.0E-05	3.9E-06	1.4E-05
METHYLNAPHTHALENE, 2-	0.1				1.8E-05	5.2E-05	7.0E-05	5.0E-05	9.8E-05	1.5E-04
NAPHTHALENE	0.1				3.6E-06	1.0E-05	1.4E-05	1.0E-06	2.0E-06	3.0E-06
PHENANTHRENE	4.9				1.2E-04	3.4E-04	4.6E-04	3.3E-05	6.4E-05	9.6E-05
PYRENE	5.4				1.3E-04	3.7E-04	5.0E-04	3.6E-05	7.0E-05	1.1E-04
ARSENIC	7.3	2.0E-06	1.3E-06	3.3E-06	2.9E-02	1.5E-02	4.5E-02	8.1E-02	2.8E-02	1.1E-01
BARIUM	65				7.9E-04	6.7E-04	1.5E-03	6.2E-03	3.6E-03	9.8E-03
BERYLLIUM	0.5				6.1E-04	5.2E-04	1.1E-03	6.7E-04	3.9E-04	1.1E-03
CHROMIUM (TOTAL)	23.5				1.9E-02	1.6E-02	3.5E-02	7.8E-03	4.6E-03	1.2E-02
LEAD	93.1				1.5E-01	1.5E-02	1.7E-01	4.1E-01	2.9E-02	4.4E-01
MERCURY	0.4				1.6E-03	2.7E-03	4.4E-03	4.4E-03	5.2E-03	9.6E-03
NICKEL	18.6				2.3E-03	3.8E-03	6.1E-03	6.2E-03	7.3E-03	1.3E-02
SILVER	0.4				1.9E-04	4.9E-04	6.9E-04	5.3E-04	9.4E-04	1.5E-03
VANADIUM	31.4				8.5E-03	7.2E-03	1.6E-02	2.3E-02	1.4E-02	3.7E-02
ZINC	78.7				6.4E-04	5.4E-04	1.2E-03	1.8E-03	1.0E-03	2.8E-03

Note! Cr(VI) limit is 200 mg/kg due to contact dermititis.
Note! Lead IH HQ limit is 1, not 10.

Resident - Soil: Table RS-2

Exposure Point Concentration (EPC)

Based on Resident Ages 1-31 (Cancer), 1-8 (Chronic Noncancer), and 1-2 (Subchronic Noncancer)

*Vegetable uptake is informational only and NOT included in totals on EPC tab.

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ELCR (all chemicals) =
Chronic HI (all chemicals) =
Subchronic HI (all chemicals) =

Oil or Hazardous Material	EPC (mg/kg)	Chronic		Subchronic
		$ELCR_{vegetable^*}$	$HQ_{vegetable^*}$	$HQ_{vegetable^*}$
ACETONE	4.0E-02			
XYLENES (Mixed Isomers)	1.2E+00			
ACENAPHTHENE	3.0E-01			
ACENAPHTHYLENE	3.0E-01			
ANTHRACENE	1.0E+00			
BENZO(a)ANTHRACENE	2.6E+00			
BENZO(a)PYRENE	2.4E+00			
BENZO(b)FLUORANTHENE	2.1E+00			
BENZO(g,h,i)PERYLENE	1.3E+00			
BENZO(k)FLUORANTHENE	1.6E+00			
CHRYSENE	2.5E+00			
DIBENZO(a,h)ANTHRACENE	5.0E-01			
FLUORANTHENE	6.2			
FLUORENE	0.5			
INDENO(1,2,3-cd)PYRENE	1.5			
METHYLNAPHTHALENE, 2-	0.1			
NAPHTHALENE	0.1			
PHENANTHRENE	4.9			
PYRENE	5.4			
ARSENIC	7.3	1.2E-04	8.7E-01	1.2E+00
BARIUM	65			
BERYLLIUM	0.5			
CHROMIUM (TOTAL)	23.5		5.3E-01	1.1E-01
LEAD	93.1		6.6E+00	9.5E+00
MERCURY	0.4			
NICKEL	18.6		2.5E-01	3.6E-01
SILVER	0.4			
VANADIUM	31.4			
ZINC	78.7		2.8E-01	4.0E-01

Resident - Soil: Table RS-3

Equations to Calculate Cancer Risk for Resident (Age 1-31 years)

Cancer Risk from Ingestion

$$ELCR_{ing} = LADD_{ing(1\text{-}31)} * CSF$$

$$LADD_{ing\,(1\text{-}31)} = LADD_{ing\,(1\text{-}8)} + LADD_{ing\,(8\text{-}15)} + LADD_{ing\,(15\text{-}31)}$$

$$LADD_{ing\,(age\ group\ x)} = \frac{[OHM]_{soil} * IR_x * RAF_{c\text{-}ing} * EF_{ing} * ED * EP_x * C}{BW_x * AP_{lifetme}}$$

Cancer Risk from Dermal Absorption

$$ELCR_{derm} = LADD_{derm} * CSF$$

$$LADD_{derm\,(1\text{-}31)} = LADD_{derm\,(1\text{-}8)} + LADD_{derm\,(8\text{-}15)} + LADD_{derm\,(15\text{-}31)}$$

$$LADD_{derm(age\ group\ x)} = \frac{[OHM]_{soil} * SA_x * RAF_{c\text{-}derm} * SAF_x * EF_{derm} * ED * EP_x * C}{BW_x * AP_{lifetime}}$$

Cancer Risk from Homegrown Produce

$$ELCR_{produce} = LADD_{produce(1\text{-}31)} * CSF$$

$$LADD_{produce(1\text{-}31)} = LADD_{produce(1\text{-}8)} + LADD_{produce(8\text{-}15)} + LADD_{produce(15\text{-}31)}$$

$$LADD_{produce(age\ x)} = \frac{[OHM_{soil}] * PUF * PIR_x * RAF_{produce} * EF_{produce} * ED * EP_x * C}{BW_x * AP_{lifetime}}$$

Vlookup Versionv0315

Parameter	Value	Units
CSF	OHM specific	$(mg/kg\text{-}day)^{-1}$
LADD	age/OHM specific	mg/kg-day
$[OHM]_{soil}$	OHM specific	mg/kg
$IR_{(1\text{-}8)}$	100	mg/day
$IR_{(8\text{-}15)}$	50	mg/day
$IR_{(15\text{-}31)}$	50	mg/day
$PIR_{(1\text{-}8)}$	12,099	mg/day
$PIR_{(8\text{-}15)}$	17,809	mg/day
$PIR_{(15\text{-}31)}$	24,420	mg/day
$RAF_{c\text{-}ing}$	OHM specific	dimensionless
$RAF_{c\text{-}derm}$	OHM specific	dimensionless
$RAF_{c\text{-}produce}$	OHM specific	dimensionless
$EF_{ing.derm}$	0.412	event/day
$EF_{produce}$	1.00	event/day
ED	1	day/event
$EP_{(1\text{-}8)}$	7	years
$EP_{(8\text{-}15)}$	7	years
$EP_{(15\text{-}31)}$	16	years
C	0.000001	kg/mg
$BW_{(1\text{-}8)}$	17.0	kg
$BW_{(8\text{-}15)}$	39.9	kg
$BW_{(15\text{-}31)}$	58.7	kg
$AP_{(lifetime)}$	70	years
$SA_{(1\text{-}8)}$	2431	cm^2 / day
$SA_{(8\text{-}15)}$	4427	cm^2 / day
$SA_{(15\text{-}31)}$	5653	cm^2 / day
$SAF_{(1\text{-}8)}$	0.35	mg/cm^2
$SAF_{(8\text{-}15)}$	0.14	mg/cm^2
$SAF_{(15\text{-}31)}$	0.13	mg/cm^2
PUF	OHM specific	$(mg/mg)(mg/mg)^{-1}$

Resident - Soil: Table RS-4
Equations to Calculate Chronic Noncancer Risk for Resident Child (Age 1-8 years)

Vlookup Versionv0315

Chronic Noncancer Risk from Ingestion

$$HQ_{ing} = \frac{ADD_{ing}}{RfD}$$

$$ADD_{ing} = \frac{[OHM]_{soil} * IR * RAF_{nc\text{-}ing} * EF_{ing} * ED * EP * C}{BW * AP}$$

Chronic Noncancer Risk from Dermal Absorption

$$HQ_{derm} = \frac{ADD_{ing,derm}}{RfD}$$

$$ADD_{derm} = \frac{[OHM]_{soil} * SA * RAF_{nc\text{-}derm} * SAF * EF_{derm} * ED * EP * C}{BW * AP}$$

Chronic Noncancer Risk from Homegrown Produce

$$HQ_{produce} = \frac{ADD_{produce}}{RfD}$$

$$ADD_{produce} = \frac{[OHM_{soil}] * PUF * PIR * RAF_{produce} * EF_{produce} * ED * EP * C}{BW * AP}$$

Parameter	Value	Units
RfD	OHM specific	mg/kg-day
ADD	OHM specific	mg/kg-day
$[OHM]_{soil}$	OHM specific	mg/kg
IR	100	mg/day
PIR	12,099	mg/day
$RAF_{nc\text{-}ing}$	OHM specific	dimensionless
$RAF_{nc\text{-}derm}$	OHM specific	dimensionless
$RAF_{nc\text{-}produce}$	OHM specific	dimensionless
$EF_{ing,derm}$	0.412	event/day
$EF_{produce}$	1.00	event/day
ED	1	day/event
EP	7	years
C	0.000001	kg/mg
BW	17.0	kg
AP	7	year
SA	2431	cm^2 / day
SAF	0.35	mg/cm^2
PUF	OHM specific	$(mg/mg)(mg/mg)^{-1}$

Resident - Soil: Table RS-5

Equations to Calculate Subchronic Noncancer Risk for Resident Child (Age 1-2 years)

Vlookup Versionv0315

Subchronic Noncancer Risk from Ingestion

$$HQ_{ing} = \frac{ADD_{ing}}{RfD_{subchronic}}$$

$$ADD_{ing} = \frac{[OHM]_{soil} * IR * RAF_{nc\text{-}ing} * EF_{ing} * ED * EP * C}{BW * AP}$$

Subchronic Noncancer Risk from Dermal Absorption

$$HQ_{derm} = \frac{ADD_{derm}}{RfD_{subchronic}}$$

$$ADD_{derm} = \frac{[OHM]_{soil} * SA * RAF_{nc\text{-}derm} * SAF * EF_{derm} * ED * EP * C}{BW * AP}$$

Subchronic Noncancer Risk from Homegrown Produce

$$HQ_{produce} = \frac{ADD_{produce}}{RfD_{subchronic}}$$

$$ADD_{produce} = \frac{[OHM_{soil}] * PUF * PIR * RAF_{produce} * EF_{produce} * ED * EP * C}{BW * AP}$$

Parameter	Value	Units
RfD	OHM specific	mg/kg-day
ADD	OHM specific	mg/kg-day
$[OHM]_{soil}$	OHM specific	mg/kg
IR	100	mg/day
PIR	10,900	mg/day
$RAF_{nc\text{-}ing}$	OHM specific	dimensionless
$RAF_{nc\text{-}derm}$	OHM specific	dimensionless
$RAF_{nc\text{-}produce}$	OHM specific	dimensionless
$EF_{ing,derm}$	0.714	event/day
$EF_{produce}$	1.00	event/day
ED	1	day/event
EP	0.577	years
C	0.000001	kg/mg
BW	10.7	kg
AP	0.577	year
SA	1670	cm^2 / day
SAF	0.35	mg/cm^2
PUF	OHM specific	$(mg/mg)(mg/mg)^{-1}$

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Resident - Soil: Table RS-6
Definitions and Exposure Factors

Parameter	Value	Units	Notes
ELCR - Excess Lifetime Cancer Risk	chemical specific	dimensionless	Pathway specific (ing =ingestion, derm=dermal, inh=inhalation)
CSF - Cancer Slope Factor	chemical specific	$(mg/kg\text{-}day)^{-1}$	see Table RS-7
LADD - Lifetime Average Daily Dose	chemical specific	mg/kg-day	Pathway specific
LADE - Lifetime Average Daily Exposure	chemical specific	$\mu g/m^3$	
HQ - Hazard Quotient	chemical specific	dimensionless	Pathway specific (ing =ingestion, derm=dermal, inh=inhalation)
RfD - Reference Dose	chemical specific	mg/kg-day	see Table RS-7
ADD - Average Daily Dose	chemical specific	mg/kg-day	Pathway specific
ADE - Average Daily Exposure	chemical specific	mg/m^3	
EPC - Exposure Point Concentration	chemical specific	mg/kg	
PUF - Plant Uptake Factor	chemical specific	$(mg/mg)(mg/mg)^{-1}$	See Table RS-7; $(mg_{OHM}/mg_{plant})/(mg_{OHM}/mg_{soil})^{-1}$
$IR_{(1-2)}$ - Soil Ingestion Rate for age group 1-2	100	mg/day	MADEP 2002. Technical Update: Calculation of an Enhanced Soil Ingestion Rate (http://www.mass.gov/dep/ors/orspubs.htm)
$IR_{(1-8)}$ - Soil Ingestion Rate for age group 1-8	100	mg/day	Ibid
$IR_{(8-15)}$ - Soil Ingestion Rate for age group 8-15	50	mg/day	Ibid
$IR_{(15-31)}$ - Soil Ingestion Rate for age group 15-31	50	mg/day	Ibid
$PIR_{(1-2)}$ = Produce Ingestion Rate for age group 1-2	10,900	mg/day	see Table RS-6
$PIR_{(1-8)}$ = Produce Ingestion Rate for age group 1-8	12,099	mg/day	see Table RS-6
$PIR_{(8-15)}$ = Produce Ingestion Rate for age group 8-15	17,809	mg/day	Ibid
$PIR_{(15-31)}$ = Produce Ingestion Rate for age group 15-31	24,420	mg/day	Ibid
RAF_c - Relative Absorption Factor for Cancer Effects	chemical specific	dimensionless	
$EF_{subchronic}$ - Exposure Frequency for subchronic ingestion or dermal exposure	0.714	event/day	5 days/week
$EF_{chronic}$ - Exposure Frequency for chronic ingestion or dermal exposure	0.412	event/day	5 days/week, 30 weeks/year
EF_{cancer} - Exposure Frequency for cancer, ingestion or dermal exposure	0.412	event/day	5 days/week, 30 weeks/year
$EF_{produce}$ - Exposure Frequency for produce ingestion, cancer and noncancer	1.00	event/day	
ED - Exposure Duration	1	day/event	
$EP_{(1-2)}$ - Exposure Period for age group 1-2	0.577	years	30 weeks
$EP_{(1-8)}$ - Exposure Period for age group 1-8	7	years	
$EP_{(8-15)}$ - Exposure Period for age group 8-15	7	years	
$EP_{(15-31)}$ - Exposure Period for age group 15-31	16	years	
$BW_{(1-2)}$ - Body Weight for age group 1-2	10.7	kg	U.S. EPA. 1997. Exposure Factors Handbook. Table 7-7, females.
$BW_{(1-8)}$ - Body Weight for age group 1-8	17.0	kg	Ibid
$BW_{(8-15)}$ - Body Weight for age group 8-15	39.9	kg	Ibid
$BW_{(15-31)}$ - Body Weight for age group 15-31	58.7	kg	Ibid
$AP_{subchronic}$ - Averaging Period for subchronic noncancer	0.577	years	30 weeks
$AP_{chronic}$ - Averaging Period for chronic noncancer	7	years	
AP_{cancer} - Averaging Period for lifetime	70	years	
$SA_{(1-2)}$ - Surface Area for age group 1-2	1670	cm^2 / day	50th percentile of face (1/3 head), forearms, hands, lower legs, and feet for females MADEP. 1995. Guidance for Disposal Site Risk Characterization. Appendix Table B-2.
$SA_{(1-8)}$ - Surface Area for age group 1-8	2431	cm^2 / day	Ibid
$SA_{(8-15)}$ - Surface Area for age group 8-15	4427	cm^2 / day	Ibid
$SA_{(15-31)}$ - Surface Area for age group 15-31	5653	cm^2 / day	Ibid
$SAF_{(1-2)}$ Surface Adherence Factor for age group 1-2	0.35	mg/cm^2	All SAFs developed for ShortForm according to procedure outlined in MA DEP Technical Update Weighted Skin-Soil Adherence Factors, April 2002
$SAF_{(1-8)}$ Surface Adherence Factor for age group 1-8	0.35	mg/cm^2	
$SAF_{(8-15)}$ - Surface Adherence Factor for age group 8-15	0.14	mg/cm^2	
$SAF_{(15-31)}$ - Surface Adherence Factor for age group 15-31	0.13	mg/cm^2	

Resident - Soil: Table RS-7
Homegrown Produce Ingestion Rate

Data on mean produce ingestion rates (wet weight, ww) in the Northeast was obtained from the 1994-1996 Continuing Survey of Food Intakes by Individuals (USDA). Data for both genders were used for children under 6, while data for males was used for individuals 6 and older. The mean ingestion rates presented in the survey represent the arithmetic average of all individuals surveyed, regardless of whether or not they had consumed the produce item (e.g., an individual that did not consume the produce item was assigned a rate of 0 g/day). To determine the mean ingestion rate for individuals who ate each produce item, the ingestion rate for all individuals (consumers and nonconsumers) was divided by the percentage of individuals who ate the item (Table RS-7A). These mean ingestion rates for the produce consumers were summed to determine the total produce ingestion rate for each age-group and converted to dry weight assuming the produce items were all 90% water.

To convert mean ingestion rates for the age-groups studied in the survey to age-groups used in risk calculations, each age-group ingestion rate from the survey (i.e., 1 - 2 year olds, 3 - 5 year olds, 6 - 11 year olds, 12 - 19 year olds, and 20 - 39 year olds) was weighted according to the number of years spent in the risk calculation age group (i.e., 1 - 8 year olds, 8 - 15 year olds, and 15 - 31 year olds) (Table RS-7B). It was assumed that 25% of produce ingested was home-grown (Table RS-7C).

Table RS-7

	White Potatoes			Dark-green vegetables			Deep-yellow vegetables		
Age-groups studied in survey	Ingestion Rate for All g/d (ww)	% of individuals that consumed item.	Ingestion Rate for Consumers g/d (ww)	Ingestion Rate for All g/d (ww)	% of individuals that consumed item.	Ingestion Rate for Consumers g/d (ww)	Ingestion Rate for All g/d (ww)	% of individuals that consumed item.	Ingestion Rate for Consumers g/d (ww)
1-2	28	40.3	69.5	6	10.1	59.4	5	12.7	39.4
3-5	30	37.1	80.9	5	6.5	76.9	7	12.7	55.1
6-11	47	44.2	106.3	6	9.1	65.9	2	8.5	23.5
12-19	59	40.3	146.4	2	2.3	87.0	11	15.8	69.6
20-39	76	45.1	168.5	25	14.7	170.1	4	5.7	70.2

	Tomatoes			Lettuce			Green Beans		
Age-groups studied in survey	Ingestion Rate for All g/d (ww)	% of individuals that consumed item.	Ingestion Rate for Consumers g/d (ww)	Ingestion Rate for All g/d (ww)	% of individuals that consumed item.	Ingestion Rate for Consumers g/d (ww)	Ingestion Rate for All g/d (ww)	% of individuals that consumed item.	Ingestion Rate for Consumers g/d (ww)
1-2	10	27.9	35.8	1	6	16.7	7	12.1	57.9
3-5	10	37.1	27.0	4	14	28.6	3	5.7	52.6
6-11	20	42	47.6	8	14.9	53.7	1	2	50.0
12-19	29	45.2	64.2	19	28.7	66.2	2	2.4	83.3
20-39	48	50.9	94.3	18	29.6	60.8	4	3.7	108.1

Table RS-7a (continued)

Age-groups studied in survey	Corn, Green peas, Lima beans Ingestion Rate for All g/d (ww)	% of individuals that consumed item.	Ingestion Rate for Consumers g/d (ww)	Melons, berries Ingestion Rate for All g/d (ww)	% of individuals that consumed item.	Ingestion Rate for Consumers g/d (ww)	Totals Wet Weight WWI g/day	Totals Dry Weight DWI g/day
1-2	12	15	80.0	7	9	77.8	436.4	43.6
3-5	14	21.7	64.5	14	11.6	120.7	506.3	50.6
6-11	9	13.6	66.2	5	5.9	84.7	498.0	49.8
12-19	14	9.9	141.4	17	5	340.0	998.1	99.8
20-39	12	7.3	164.4	6	4.5	133.3	969.7	97.0

Table RS-7B

Age-groups studied in survey	Years spent in age-group 1-8 year old	Years spent in age-group 8-15 year old	Years spent in age-group 15-31 year old
1-2	2		
3-5	3		
6-11	2	4	
12-19		3	4
20-39			12
	7	7	16

Table RS-7C

	Produce intake, dry weight Child 1-2 years g/day	Child 1-8 years g/day	Child 8-15 years g/day	Adult 15-31 g/day
All Produce:	43.6	48.4	71.2	97.7
Homegrown:	10.9	12.1	17.8	24.4

Resident - Soil: Table RS-8
Chemical-Specific Data

Oil or Hazardous Material	CSF (mg/kg-day)$^{-1}$	RAF$_{c\text{-}ing}$	RAF$_{c\text{-}derm}$	RAF$_{c\text{-}prod}$	Chronic RfD mg/kg-day	Subchronic RfD mg/kg-day	Chronic RAF$_{nc\text{-}ing}$	Chronic RAF$_{nc\text{-}derm}$	Subchronic RAF$_{nc\text{-}ing}$	Subchronic RAF$_{nc\text{-}derm}$	RAF$_{nc\text{-}prod}$	PUF
ACETONE					9.0E-01	2.7E+00	1	0.03	1	0.03		
XYLENES (Mixed Isomer					2.0E-01	4.0E-01	1	0.03	1	0.03		
ACENAPHTHENE					6.0E-02	2.0E-01	0.3	0.1	0.3	0.1		
ACENAPHTHYLENE					3.0E-02	3.0E-01	0.3	0.1	0.3	0.1		
ANTHRACENE					3.0E-01	1.0E+00	0.3	0.1	0.3	0.1		
BENZO(a)ANTHRACENI	7.3E-01	0.30	0.02		3.0E-02	3.0E-01	0.3	0.02	0.3	0.02		
BENZO(a)PYRENE	7.3E+00	0.30	0.02		3.0E-02	3.0E-01	0.3	0.02	0.3	0.02		
BENZO(b)FLUORANTHI	7.3E-01	0.30	0.02		3.0E-02	3.0E-01	0.3	0.02	0.3	0.02		
BENZO(g,h,i)PERYLENE					3.0E-02	3.0E-01	0.3	0.1	0.3	0.1		
BENZO(k)FLUORANTHI	7.3E-02	0.30	0.02		3.0E-02	3.0E-01	0.3	0.02	0.3	0.02		
CHRYSENE	7.3E-02	0.30	0.02		3.0E-02	3.0E-01	0.3	0.02	0.3	0.02		
DIBENZO(a,h)ANTHRAC	7.3E+00	0.30	0.02		3.0E-02	3.0E-01	0.3	0.02	0.3	0.02		
FLUORANTHENE					4.0E-02	1.0E-01	0.3	0.1	0.3	0.1		
FLUORENE					4.0E-02	4.0E-01	0.3	0.1	0.3	0.1		
INDENO(1,2,3-cd)PYREI	7.3E-01	0.30	0.02		3.0E-02	3.0E-01	0.3	0.02	0.3	0.02		
METHYLNAPHTHALENI					4.0E-03	4.0E-03	0.3	0.1	0.3	0.1		
NAPHTHALENE					2.0E-02	2.0E-01	0.3	0.1	0.3	0.1		
PHENANTHRENE					3.0E-02	3.0E-01	0.3	0.1	0.3	0.1		
PYRENE					3.0E-02	3.0E-01	0.3	0.1	0.3	0.1		
ARSENIC	1.5E+00	0.50	0.03	1.00	3.0E-04	3.0E-04	0.5	0.03	0.5	0.03	1	0.05
BARIUM					2.0E-01	7.0E-02	1	0.1	1	0.1		
BERYLLIUM					2.0E-03	5.0E-03	1	0.1	1	0.1		
CHROMIUM (TOTAL)					3.0E-03	2.0E-02	1	0.1	1	0.1	1	0.095
LEAD					7.5E-04	7.5E-04	0.5	0.006	0.5	0.006	0.5	0.15
MERCURY					3.0E-04	3.0E-04	0.5	0.1	0.5	0.1		
NICKEL					2.0E-02	2.0E-02	1	0.2	1	0.2	1	0.38
SILVER					5.0E-03	5.0E-03	1	0.3	1	0.3		
VANADIUM					9.0E-03	9.0E-03	1	0.1	1	0.1		

Resident - Soil: Table RS-9
Cyanide Calculations

The soil cyanide concentration limit set to protect a child resident against an acute, potentially lethal one-time dose of cyanide from incidental ingestion of contaminated soil is 100 mg/kg soil. This is the concentration of available cyanide in soil below which acute human health effects would not be expected following a one-time exposure. This soil concentration is calculated using the equation below with a pica-type soil ingestion of 1000 mg_{soil} and an available cyanide dose limit of 0.01 $mg/kg_{body\ weight}$.

MassDEP's guidance on evaluating the risk from a one-time cyanide dose considers cyanide's potentially lethal effects as well as information on cyanide metabolism:

> Cyanides are detoxified rapidly by the body, and a large acute dose which overwhelms the detoxification mechanism is potentially more toxic than the same dose distributed over a period of hours. (MassDEP *Background Documentation for the Development of an Available Cyanide Benchmark Concentration* , originally dated October 1992, Modified August 1998)

Assessment of a potential one-time dose requires an estimate of the maximum soil concentration the receptor could contact at any one time. The average soil concentration within a typical exposure area will underestimate the potential one-time dose. Therefore, to assess the acute risk of a one-time potentially lethal dose, the EPC for cyanide should be a conservative estimate of the maximum soil concentration.

The residential soil concentration limit to protect against adverse effects from an acute (one-time) exposure to cyanide is 100 mg/kg.

Concentration Calculation for Cyanide

$$\text{Concentration} = \frac{\text{HQ x Acute Dose Limit x BW}}{\text{IR x RAF x Conversion Factor}}$$

Parameter	Value	Units
HQ (Hazard Quotient)	1	(unitless)
Acute Dose Limit	0.01	mg avail. CN/ kg BW
BW (Body Weight) $_{1\text{-}2}$	10.7	kg
IR $_{\text{(1-time reasonable max)}}$	1000	mg
Conversion Factor	1.0E-06	kg soil / mg soil
RAF	1	(unitless)

The toxicological basis for estimating an allowable one-time dose is documented in MassDEP's 1992 *Background Documentation for the Development of an "Available Cyanide" Benchmark Concentration,* which is published at: http://www.mass.gov/eea/docs/dep/toxics/stypes/dscyanide.pdf

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Method 3 Risk Assessment for a Trespasser Exposed to Chemicals in Soil - Shortform 2012 (sf12ts)

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Spreadsheets designed by Andrew Friedmann, MassDEP

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Trespasser - Soil: Table TS-1
Exposure Point Concentration (EPC)
Based on Trespasser Ages 11-18 (Cancer and Non-Cancer)

ShortForm Version 10-12

Vlookup Version v0315

ELCR (all chemicals) = 3.3E-07

Chronic HI (all chemicals) = 1.8E-02

Subchronic HI (all chemicals) = 3.5E-02

****Do not insert or delete any rows****

Click on empty cell below and select OHM using arrow

Oil or	EPC				Chronic			Subchronic		
Hazardous Material	**(mg/kg)**	**ELCR$_{ingestion}$**	**ELCR$_{dermal}$**	**ELCR$_{total}$**	**HQ$_{ing}$**	**HQ$_{derm}$**	**HQ$_{total}$**	**HQ$_{ing}$**	**HQ$_{derm}$**	**HQ$_{total}$**
ACETONE	4.0E-02				7.2E-09	1.8E-09	9.0E-09	5.3E-09	1.1E-09	6.3E-09
XYLENES (Mixed Isomers)	1.2E+00				9.7E-07	2.4E-07	1.2E-06	1.1E-06	2.2E-07	1.3E-06
ACENAPHTHENE	3.0E-01				2.4E-07	6.7E-07	9.1E-07	1.6E-07	3.7E-07	5.3E-07
ACENAPHTHYLENE	3.0E-01				4.9E-07	1.3E-06	1.8E-06	1.1E-07	2.5E-07	3.5E-07
ANTHRACENE	1.0E+00				1.6E-07	4.4E-07	6.1E-07	1.1E-07	2.5E-07	3.5E-07
BENZO(a)ANTHRACENE	2.6E+00	9.2E-09	5.1E-09	1.4E-08	4.2E-06	2.3E-06	6.5E-06	9.2E-07	4.3E-07	1.3E-06
BENZO(a)PYRENE	2.4E+00	8.5E-08	4.7E-08	1.3E-07	3.9E-06	2.1E-06	6.0E-06	8.5E-07	3.9E-07	1.2E-06
BENZO(b)FLUORANTHENE	2.1E+00	7.5E-09	4.1E-09	1.2E-08	3.4E-06	1.9E-06	5.3E-06	7.4E-07	3.4E-07	1.1E-06
BENZO(g,h,i)PERYLENE	1.3E+00				2.1E-06	5.8E-06	7.9E-06	4.6E-07	1.1E-06	1.5E-06
BENZO(k)FLUORANTHENE	1.6E+00	5.7E-10	3.1E-10	8.8E-10	2.6E-06	1.4E-06	4.0E-06	5.7E-07	2.6E-07	8.3E-07
CHRYSENE	2.5E+00	8.9E-10	4.9E-10	1.4E-09	4.1E-06	2.2E-06	6.3E-06	8.9E-07	4.1E-07	1.3E-06
DIBENZO(a,h)ANTHRACENE	5.0E-01	1.8E-08	9.7E-09	2.7E-08	8.1E-07	4.4E-07	1.3E-06	1.8E-07	8.2E-08	2.6E-07
FLUORANTHENE	6.2				7.5E-06	2.1E-05	2.8E-05	6.6E-06	1.5E-05	2.2E-05
FLUORENE	0.5				6.1E-07	1.7E-06	2.3E-06	1.3E-07	3.1E-07	4.4E-07
INDENO(1,2,3-cd)PYRENE	1.5	5.3E-09	2.9E-09	8.2E-09	2.4E-06	1.3E-06	3.8E-06	5.3E-07	2.5E-07	7.8E-07
METHYLNAPHTHALENE, 2-	0.1				1.2E-06	3.3E-06	4.5E-06	2.7E-06	6.1E-06	8.8E-06
NAPHTHALENE	0.1				2.4E-07	6.7E-07	9.1E-07	5.3E-08	1.2E-07	1.8E-07
PHENANTHRENE	4.9				7.9E-06	2.2E-05	3.0E-05	1.7E-06	4.0E-06	5.8E-06
PYRENE	5.4				8.7E-06	2.4E-05	3.3E-05	1.9E-06	4.4E-06	6.3E-06
ARSENIC	7.3	8.9E-08	4.4E-08	1.3E-07	2.0E-03	9.7E-04	2.9E-03	4.3E-03	1.8E-03	6.1E-03
BARIUM	65				5.3E-05	4.3E-05	9.6E-05	3.3E-04	2.3E-04	5.6E-04
BERYLLIUM	0.5				4.1E-05	3.3E-05	7.4E-05	3.5E-05	2.5E-05	6.0E-05
CHROMIUM (TOTAL)	23.5				1.3E-03	1.0E-03	2.3E-03	4.2E-04	2.9E-04	7.1E-04
LEAD	93.1				1.0E-02	9.9E-04	1.1E-02	2.2E-02	1.8E-03	2.4E-02
MERCURY	0.4				1.1E-04	1.8E-04	2.9E-04	2.4E-04	3.3E-04	5.6E-04
NICKEL	18.6				1.5E-04	2.5E-04	4.0E-04	3.3E-04	4.6E-04	7.9E-04
SILVER	0.4				1.3E-05	3.2E-05	4.5E-05	2.8E-05	5.9E-05	8.7E-05
VANADIUM	31.4				5.7E-04	4.7E-04	1.0E-03	1.2E-03	8.6E-04	2.1E-03
ZINC	78.7				4.3E-05	3.5E-05	7.7E-05	9.3E-05	6.4E-05	1.6E-04

Note! Cr(VI) limit is 200 mg/kg due to contact dermititis.

Trespasser - Soil: Table TS-2
Equations to Calculate Cancer Risk for a Trespasser (Age 11-18 years)

Cancer Risk from Ingestion

$$ELCR_{ing} = LADD_{ing} * CSF$$

$$LADD_{ing} = \frac{[OHM]_{soil} * IR * RAF_{c\text{-}ing} * EF_{ing} * ED * EP * C}{BW * AP_{lifetime}}$$

Cancer Risk from Dermal Absorption

$$ELCR_{derm} = LADD_{derm} * CSF$$

$$LADD_{derm} = \frac{[OHM]_{soil} * SA * RAF_{c\text{-}derm} * SAF * EF_{derm} * ED * EP * C}{BW * AP_{lifetime}}$$

Vlookup Version v0315

Parameter	Value	Units
CSF	OHM specific	(mg/kg-day)$^{-1}$
LADD	age/OHM specific	mg/kg-day
$[OHM]_{soil}$	OHM specific	mg/kg
IR	50	mg/day
$RAF_{c\text{-}ing}$	OHM specific	dimensionless
$RAF_{c\text{-}derm}$	OHM specific	dimensionless
$EF_{ing,derm}$	0.164	event/day
ED	1	day/event
EP	7	years
C	0.000001	kg/mg
BW	50.7	kg
$AP_{(lifetime)}$	70	years
SA	2940	cm^2 / day
SAF	0.14	mg/cm^2

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Trespasser - Soil: Table TS-3

Equations to Calculate Chronic Noncancer Risk for a Trespasser (Age 11-18 years)

Chronic Noncancer Risk from Ingestion

$$HQ_{ing} = \frac{ADD_{ing}}{RfD}$$

$$ADD_{ing} = \frac{[OHM]_{soil} * IR * RAF_{nc\text{-}ing} * EF_{ing} * ED * EP * C}{BW * AP}$$

Chronic Noncancer Risk from Dermal Absorption

$$HQ_{derm} = \frac{ADD_{ing,derm}}{RfD}$$

$$ADD_{derm} = \frac{[OHM]_{soil} * SA * RAF_{nc\text{-}derm} * SAF * EF_{derm} * ED * EP * C}{BW * AP}$$

Vlookup Version v0315

Parameter	Value	Units
RfD	OHM specific	mg/kg-day
ADD	OHM specific	mg/kg-day
$[OHM]_{soil}$	OHM specific	mg/kg
IR	50	mg/day
$RAF_{nc\text{-}ing}$	OHM specific	dimensionless
$RAF_{nc\text{-}derm}$	OHM specific	dimensionless
$EF_{ing,derm}$	0.164	event/day
ED	1	day/event
EP	7	years
C	0.000001	kg/mg
BW	50.7	kg
AP	7	year
SA	2940	cm^2 / day
SAF	0.14	mg/cm^2

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Trespasser - Soil: Table TS-4
Equations to Calculate Subchronic Noncancer Risk for a Trespasser (Age 11-12 years)

Subchronic Noncancer Risk from Ingestion

$$HQ_{ing} = \frac{ADD_{ing}}{RfD_{subchronic}}$$

$$ADD_{ing} = \frac{[OHM]_{soil} * IR * RAF_{nc\text{-}ing} * EF_{ing} * ED * EP * C}{BW * AP}$$

Subchronic Noncancer Risk from Dermal Absorption

$$HQ_{derm} = \frac{ADD_{derm}}{RfD_{subchronic}}$$

$$ADD_{derm} = \frac{[OHM]_{soil} * SA * RAF_{nc\text{-}derm} * SAF * EF_{derm} * ED * EP * C}{BW * AP}$$

Vlookup Version v0315

Parameter	Value	Units
RfD	OHM specific	mg/kg-day
ADD	OHM specific	mg/kg-day
$[OHM]_{soil}$	OHM specific	mg/kg
IR	50	mg/day
$RAF_{nc\text{-}ing}$	OHM specific	dimensionless
$RAF_{nc\text{-}derm}$	OHM specific	dimensionless
$EF_{ing,derm}$	0.286	event/day
ED	1	day/event
EP	0.577	years
C	0.000001	kg/mg
BW	40.3	kg
AP	0.577	year
SA	2477	cm^2 / day
SAF	0.14	mg/cm^2

Trespasser - Soil: Table TS-5
Definitions and Exposure Factors

Parameter	Value	Units	Notes
ELCR - Excess Lifetime Cancer Risk	chemical specific	dimensionless	Pathway specific (ing =ingestion, derm=dermal, inh=inhalation)
CSF - Cancer Slope Factor	chemical specific	$(mg/kg\text{-}day)^{-1}$	see Table RS-7
LADD - Lifetime Average Daily Dose	chemical specific	mg/kg-day	Pathway specific
HQ - Hazard Quotient	chemical specific	dimensionless	Pathway specific (ing =ingestion, derm=dermal, inh=inhalation)
RfD - Reference Dose	chemical specific	mg/kg-day	see Table RS-7
ADD - Average Daily Dose	chemical specific	mg/kg-day	Pathway specific
EPC - Exposure Point Concentration	chemical specific	mg/kg	
IR - Soil Ingestion Rate	50	mg/day	MADEP 2002 Technical Update: Calculation of an Enhanced Soil Ingestion Rate (http://www mass.gov/dep/ors/orspubs.htm)
RAF_c - Relative Absorption Factor for Cancer Effects	chemical specific	dimensionless	
$EF_{subchronic}$ - Exposure Frequency for subchronic ingestion or dermal exposure	0.286	event/day	2 days/week
$EF_{chronic}$ - Exposure Frequency for chronic ingestion or dermal exposure	0.164	event/day	2 days/week, 30 weeks/year
EF_{cancer} - Exposure Frequency for cancer, ingestion or dermal exposure	0.164	event/day	2 days/week, 30 weeks/year
ED - Exposure Duration	1	day/event	
$EP_{(11-12)}$ - Exposure Period for age group 11-12	0.577	years	30 weeks
$EP_{(11-18)}$ - Exposure Period for age group 11-18	7	years	
$BW_{(11-12)}$ - Body Weight for age group 11-12	40.3	kg	U.S. EPA 1997. Exposure Factors Handbook. Table 7-7
$BW_{(11-18)}$ - Body Weight for age group 11-18	50.7	kg	Ibid
$AP_{subchronic}$ - Averaging Period for subchronic noncancer	0.577	years	30 weeks
$AP_{chronic}$ - Averaging Period for chronic noncancer	7	years	
AP_{cancer} - Averaging Period for lifetime	70	years	
$SA_{(11-12)}$ - Surface Area for age group 11-12	2477	cm^2 / day	50th percentile of forearms, hands, and feet for females. MADEP 1995 Guidance for Disposal Site Risk Characterization, Table B-2.
$SA_{(11-18)}$ - Surface Area for age group 11-18	2940	cm^2 / day	Ibid
SAF - Surface Adherence Factor, Trespasser	0.14	mg/cm^2	SAF developed for ShortForm according to procedure outlined in MA DEP Technical Update Weighted Skin-Soil Adherence Factors, April 2002.

Trespasser - Soil: Table TS-6
Chemical-Specific Data

Oil or Hazardous Material	CSF (mg/kg-day)$^{-1}$	RAF$_{c\text{-}ing}$	RAF$_{c\text{-}derm}$	Chronic RfD mg/kg-day	Subchronic RfD mg/kg-day	Chronic RAF$_{nc\text{-}ing}$	Chronic RAF$_{nc\text{-}derm}$	Subchronic RAF$_{nc\text{-}ing}$	Subchronic RAF$_{nc\text{-}derm}$
ACETONE				9.0E-01	2.7E+00	1	0.03	1	0.03
XYLENES (Mixed Isomei				2.0E-01	4.0E-01	1	0.03	1	0.03
ACENAPHTHENE				6.0E-02	2.0E-01	0.3	0.1	0.3	0.1
ACENAPHTHYLENE				3.0E-02	3.0E-01	0.3	0.1	0.3	0.1
ANTHRACENE				3.0E-01	1.0E+00	0.3	0.1	0.3	0.1
BENZO(a)ANTHRACENI	7.3E-01	0.30	0.02	3.0E-02	3.0E-01	0.3	0.02	0.3	0.02
BENZO(a)PYRENE	7.3E+00	0.30	0.02	3.0E-02	3.0E-01	0.3	0.02	0.3	0.02
BENZO(b)FLUORANTHI	7.3E-01	0.30	0.02	3.0E-02	3.0E-01	0.3	0.02	0.3	0.02
BENZO(g,h,i)PERYLENI				3.0E-02	3.0E-01	0.3	0.1	0.3	0.1
BENZO(k)FLUORANTHI	7.3E-02	0.30	0.02	3.0E-02	3.0E-01	0.3	0.02	0.3	0.02
CHRYSENE	7.3E-02	0.30	0.02	3.0E-02	3.0E-01	0.3	0.02	0.3	0.02
DIBENZO(a,h)ANTHRAC	7.3E+00	0.30	0.02	3.0E-02	3.0E-01	0.3	0.02	0.3	0.02
FLUORANTHENE				4.0E-02	1.0E-01	0.3	0.1	0.3	0.1
FLUORENE				4.0E-02	4.0E-01	0.3	0.1	0.3	0.1
INDENO(1,2,3-cd)PYREI	7.3E-01	0.30	0.02	3.0E-02	3.0E-01	0.3	0.02	0.3	0.02
METHYLNAPHTHALENI				4.0E-03	4.0E-03	0.3	0.1	0.3	0.1
NAPHTHALENE				2.0E-02	2.0E-01	0.3	0.1	0.3	0.1
PHENANTHRENE				3.0E-02	3.0E-01	0.3	0.1	0.3	0.1
PYRENE				3.0E-02	3.0E-01	0.3	0.1	0.3	0.1
ARSENIC	1.5E+00	0.50	0.03	3.0E-04	3.0E-04	0.5	0.03	0.5	0.03
BARIUM				2.0E-01	7.0E-02	1	0.1	1	0.1
BERYLLIUM				2.0E-03	5.0E-03	1	0.1	1	0.1
CHROMIUM (TOTAL)				3.0E-03	2.0E-02	1	0.1	1	0.1
LEAD				7.5E-04	7.5E-04	0.5	0.006	0.5	0.006
MERCURY				3.0E-04	3.0E-04	0.5	0.1	0.5	0.1
NICKEL				2.0E-02	2.0E-02	1	0.2	1	0.2
SILVER				5.0E-03	5.0E-03	1	0.3	1	0.3
VANADIUM				9.0E-03	9.0E-03	1	0.1	1	0.1

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Trespasser - Soil: Table TS-7
Cyanide Calculations

The soil cyanide concentration limit set to protect a trespasser against an acute, potentially lethal one-time dose of cyanide from incidental ingestion of contaminated soil is 8,000 mg/kg_{soil}. This is the concentration of available cyanide in soil below which acute human health effects would not be expected following a one-time exposure. This soil concentration is calculated using the equation below with a one-time soil ingestion estimate of 50 mg_{soil} and an available cyanide dose limit of 0.01 mg/$kg_{body\ weight}$.

MassDEP's guidance on evaluating the risk from a one-time cyanide dose considers cyanide's potentially lethal effects as well as information on cyanide metabolism:

> Cyanides are detoxified rapidly by the body, and a large acute dose which overwhelms the detoxification mechanism is potentially more toxic than the same dose distributed over a period of hours. (MassDEP *Background Documentation for the Development of an Available Cyanide Benchmark Concentration,* originally dated October 1992, Modified August 1998)

Assessment of a potential one-time dose requires an estimate of the maximum soil concentration the trespasser could contact at any one time. The average soil concentration within a typical exposure area will underestimate the potential one-time dose. Therefore, to assess the acute risk of a one-time potentially lethal dose, the EPC for cyanide should be a conservative estimate of the maximum soil concentration.

The trespasser soil concentration limit to protect against adverse effects from an acute (one-time) exposure to cyanide is 8000 mg/kg.

Concentration Calculation for Cyanide

$$\text{Concentration} = \frac{\text{HQ} \times \text{Acute Dose Limit} \times \text{BW}}{\text{IR} \times \text{RAF} \times \text{Conversion Factor}}$$

Parameter	Value	Units
HQ (Hazard Quotient)	1	(unitless)
Acute Dose Limit	0.01	mg avail. CN/ kg BW
BW (Body Weight) $_{11\text{-}12}$	40.3	kg
IR $_{(1\text{-time reasonable max})}$	50	mg
Conversion Factor	1.0E-06	kg soil / mg soil
RAF	1	(unitless)

The toxicological basis for estimating an allowable one-time dose is documented in MassDEP's 1992 *Background Documentation for the Development of an "Available Cyanide" Benchmark Concentration,* which is published at: http://www.mass.gov/eea/docs/dep/toxics/stypes/dscyanide.pdf

Trespasser - Soil: Table TS-7
Cyanide Calculations

The soil cyanide concentration limit set to protect a trespasser against an acute, potentially lethal one-time dose of cyanide from incidental ingestion of contaminated soil is 8,000 mg/kg_{soil}. This is the concentration of available cyanide in soil below which acute human health effects would not be expected following a one-time exposure. This soil concentration is calculated using the equation below with a one-time soil ingestion estimate of 50 mg_{soil} and an available cyanide dose limit of 0.01 $mg/kg_{body\ weight}$.

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The trespasser soil concentration limit to protect against adverse effects from an acute (one-time) exposure to cyanide is 8000 mg/kg.

APPENDIX E

HAGER GEOSCIENCE, INC.

Geophysical Survey for USTs
343-351 Summer Street
Somerville, MA

May 16th, 2017
File 2017024

Prepared for:
EnviroTrac Ltd.
2 Merchant Street, Suite 2
Sharon, MA 02067

EDWOSB CERTIFICATION AWARD

USWCC
U.S. Women's Chamber
of Commerce

EDWOSB
Federal
Certified Economically
Disadvantaged Women Owned
Small Business

1.0 INTRODUCTION

This report details the results of a geophysical survey conducted by Hager GeoScience, Inc. (HGI) for EnviroTrac Ltd. (EnviroTrac) at 343-351 Summer Street in Somerville, Massachusetts. Three USTs (250, 500, and 1,500 gallons) shown on a Sanborn map have reportedly been removed. The objective of the survey was to confirm that neither these nor additional USTs are still present.

2.0 DATA ACQUISITION

HGI performed the fieldwork on April 28th, 2017. Lauren Main of EnviroTrac was on site to delineate the area of interest specified by EnviroTrac's client based on interpretations of historic blueprints of the site. HGI personnel used spray-paint and open reel fiberglass tapes to lay out two survey grids: Grid A covering the 351 Summer Street parking lot and Grid B covering the 343-349 Summer Street vegetated area. Geophysical data were collected in all accessible portions of the survey grids using ground penetrating radar (GPR) and electromagnetic (EM) methods. Grid locations were surveyed using HGI's Sokkia RTK GNSS GRX2 GPS system. The extent of the survey area, locations of the GPR and EM traverse, and features of interest are shown on Plate 1, an AutoCAD Map 3D 2016 plot created from the HGI field notes, GPS data, an aerial image provided by Microsoft© Bing, and the pdf file "Maggiore Summer St_1934-1950 Sanborn Map (WITH LABELS)" provided by EnviroTrac.

Discussions specific to the GPR and EM data collection are provided below, while Appendix A contains more general discussions of the methods and their limitations.

2.1 GPR Survey

HGI used a GSSI SIR-4000 digital acquisition system with both 350- and 400-MHz antennas to collect GPR data along orthogonal traverses spaced 2.5 feet apart. The 400-MHz antenna and 3-wheel cart were used in Grid B due to the difficult terrain in that portion of the survey area. The data were displayed in real time on the system's color monitor for initial quality control while being simultaneously recorded on its hard drive. They were subsequently downloaded to a PC at the HGI office for processing and analysis.

The signal-to-noise ratio of the GPR data allowed for a signal penetration of 5 to 6 feet below grade; it was difficult to reliably detect targets below these depths.

Table 1 below shows the pertinent parameters used for the GPR data collection.

Table 1. GPR Survey Acquisition Parameters

Antenna Frequency (MHz)	Range (ns)	Survey Mode	Scan Rate (per sec)	Scan Rate (per ft)	Sample Rate (per scan)	Effective Signal Depth (ft)
400	100	Wheel	100	28	512	5-6
350	100	Wheel	100	28	512	5-6

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2.2 EM Survey

HGI collected EM data using a Geonics EM61-MK2 (EM61) high-powered time domain metal detector, which uses a single transmitting coil to induce secondary time-varying magnetic fields in metallic objects. Two receiving coils detect this secondary magnetic field, which is measured in millivolts (mV). EM data were collected along north-south traverses spaced 5 feet apart. They were recorded and stored in the internal memory of an Allegro field PC and transferred to an HGI office computer for preliminary quality control and subsequent data processing.

Table 2 below shows the pertinent parameters for collection of the EM data.

Table 2. EM Data Acquisition Parameters

EM61 Mode	Readings/s	Wheel Inc.	GPS Input	NMEA Data
Wheel	N/A	0.62	No	N/A

2.3 GPS

HGI used its Sokkia RTK GNSS GRX2 GPS system to locate the survey grids and select surface features for reference. The Sokkia system provided a relative accuracy of less than 0.164 feet horizontally and 0.328 feet vertically for points in the Massachusetts State Plane coordinate system (MA83F).

3.0 DATA REDUCTION AND ANALYSIS

3.1 GPR

The downloaded GPR data were archived, processed, and analyzed using GSSI's RADAN® 7 software. Prior to analysis, the raw GPR data required processing to reduce the detrimental effects of site-specific noise associated with interfering background frequency signals and reflections from surface and subsurface structures. The processed records were then used to construct 3D models of the surveyed areas. 3D models are useful for viewing the spatial qualities of the data and identifying subtle spatial features that may not be apparent in individual 2D records. The 3D models were sliced horizontally and vertically to observe patterns of GPR anomalies present in the radar data.

Each 2D record was also individually evaluated for possible anomalies. Preliminary interpretations based on analysis of the individual 2D records were plotted and evaluated in a spatial context using the 3D model. Conversely, spatial anomalies observed in the 3D model were re-examined on the individual records to ensure that all possible anomalies were evaluated. The interpreted individual GPR targets were then exported to AutoCAD, where linear trends and areal anomalies were determined.

Due to the non-uniqueness of the reflected GPR signal, the exact identity of features causing anomalies cannot always be determined, and further investigation through excavation or drilling

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is recommended.

3.2 EM Survey

The downloaded EM data were reduced using TRACKMAKER61MK2® and DAT61MK2® software, which was also used to adjust for survey geometry and latency during data collection.

The readings taken by the EM61 are relative to a "normalized" value calibrated within the grid, and the values are in millivolts (mV). High-conductivity anomalies (yellow to red) are typically associated with metal structures, metal debris, or iron-rich soils.

Filled color contour plots for the EM61 data were prepared using Golden Software's Surfer for Windows V12® with a kriging interpolation method. The EM61 is capable of observing the electromagnetic response at various times or "time gates," which can provide useful information on the nature of a target. The response from the first time gate (216 μs) was found to be the most informative and was exported from Surfer into AutoCAD as a .dxf file and saved as an AutoCAD drawing.

4.0 RESULTS

HGI's geophysical survey results and interpretations are shown on Plates 2 through 4, AutoCAD maps created from the HGI field notes, GPS data, GPR and EM interpretations, an aerial photograph of the site, and the pdf file "Maggiore Summer St_1934-1950 Sanborn Map (WITH LABELS)" provided by EnviroTrac.

5.0 DISCUSSION

Based on GPR reflections and elevated EM signal amplitudes, four potential USTs (red boxes) were located in the 351 Summer Street survey area (Grid A). These are shown as red boxes on Plates 2 and 4 and recommended for "ground-truthing." Due to location, response, and limitations in coverage at the southwestern corner of Grid A, we particularly recommend ground-truthing the possible UST features in this area location. A third potential UST located near the center of Grid A appears to be related to the contents of a former building in this area, and a fourth potential UST in the northwest quadrant of Grid A shows the geometry and GPR signal amplitude typical of a UST as well as elevated EM values.

EM anomalies are present in the southeastern corner of Grid A where three USTs were reportedly removed, but as the GPR data did not show UST-like signatures in this area, we conclude that the EM anomalies are caused by buried metal piping or debris that may be related to the UST removal.

Several GPR anomalous zones and/or anomalies are present in both Grids A and B. Anomalous zones, shown as hatched cyan boxes, result from signal response that deviates from that of the background material. This may be due to differences in fill, asphalt mix or thickness, or soil disturbance and backfill, but multiple utilities or obstructions may also be present. Two large anomalous zones are present in Grid A. Directly to their south is a small anomaly 2 to 3 feet

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deep present in both the GPR and EM data that may be caused by a long, flat metal object. Other small anomalies present in both the GPR and EM data are likely caused by buried metal debris. The linear GPR anomalies in the eastern portion of Grid A are likely utilities or utility remnants.

A rectangular GPR anomaly 1 to 3 feet deep was identified in the northeastern part of Grid B. This anomaly was not seen in the EM data, so the source appears to non-metallic.

Additional features of interest include two former excavations in Grid A that may be tank graves. The fill material within the excavations produces both GPR and EM anomalies, indicating the presence of metal debris. Directly east of the more northern excavation is a flat, near- surface GPR anomaly that appears to be caused by a concrete slab. A similar but deeper feature showing elevated signatures in both the GPR and EM data was identified north of the excavations.

Multiple EM anomalies are present in both grids, many of them without corroborating GPR anomalies linking them to metal debris. A large cluster in the northwestern corner of Grid A is likely the result of buried metal debris. An additional area of EM anomalies is present in the southern portion of Grid A, possibly related to the second entrance to the parking lot. The large amorphous EM anomaly in Grid B correlates with the location of the test pit based on information from EnviroTrac. It may have been filled with non-native soils and debris. The two rectangular areas labeled “Metallic Surface Debris” mark the locations of rebar and other surface metal visible at the time of HGI’s survey. The EM anomalies around the MBTA vent in Grid B are caused by the metal fence surrounding the vent.

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APPENDIX A: THE GEOPHYSICAL METHODS

A.1 Ground Penetrating Radar

A.1.1 Description of the Method. The principle of ground penetrating radar (GPR) is the same as that used by police radar, except that GPR transmits electromagnetic energy into the ground. The energy is reflected back to the surface from interfaces between materials with contrasting electrical (dielectric and conductivity) and physical properties. The greater the contrast between two materials in the subsurface, the stronger the reflection observed on the GPR record. The depth of GPR signal penetration depends on the properties of the subsurface materials and the frequency of the antenna used to collect radar data. The lower the antenna frequency, the greater the signal penetration, but the lower the signal resolution.

GPR data are collected using a Geophysical Survey Systems (GSSI) SIR 20/2000/3000/4000 ground penetrating radar system. GPR data are digitally recorded on the internal hard drive or flash memory of the system. System controls allow the GPR operator to filter out noise, attributed to both coupling noise, caused by conductive soil conditions, spurious noise caused by local EMF fields and internal system noise. For shallow surveys, we use antennas with center frequencies ranging from 200 to 400 megahertz (MHz). For deeper penetration, we use lower frequency antennas ranging from 300 to 15 MHz, depending on the anticipated depth of the target(s) and the degree of signal penetration. All of these antenna configurations can collect data in continuous mode or as discrete point measurements using signal-stacking techniques. Since there is a tradeoff between signal penetration and resolution, the highest frequency antenna that produces the best quality data is used. In some cases, data are collected with several antenna frequencies.

A.1.2 Data Analysis and Interpretation. The horizontal scale of the GPR record shows distance along the survey traverse. In the continuous data collection mode, the horizontal scale on each GPR record is determined by the antenna speed along the surface. When a survey wheel is used, the GPR system records data with a fixed number of traces per unit distance. The GPR record is automatically marked at specified distance intervals along the survey line. The vertical scale of the radar record is determined by the velocity of the transmitted signal and the recording time window or range. The recording time interval, or range, represents the maximum two-way travel time in which data are recorded. The conversion of two-way travel time to depth depends on the propagation velocity of the GPR signal, which is site specific. When little or no information is available about the makeup of subsurface materials, we estimate propagation velocities from handbook values and experience at similar sites or by CDP velocity surveys with a bi-static antenna.

After completion of data collection, the GPR data are transferred to a PC for review and processing using RADAN® 7 software. When appropriate, we prepare 3D models of GPR data, which can be sliced in the X, Y, and Z directions.

The size, shape, and amplitude of GPR reflections are used to interpret GPR data. Objects such as metallic UST's and utilities produce reflections with high amplitude and distinctive hyperbolic shapes. Clay, concrete pipes, boulders and other in-situ features may produce radar signatures of

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similar shape but lower amplitude. The boundaries between saturated and unsaturated materials such as sand and clay, bedrock and overburden generally also produce strong reflections.

A.1.3 Limitations of the Method. GPR signal penetration is site-specific. It is determined by the dielectric properties of local soil and fill materials. GPR signals propagate well in resistive materials such as sand and gravel; however, soils containing clay, ash- or cinder-laden fill or fill saturated with brackish or otherwise electrically conductive groundwater cause GPR signal attenuation and loss of target resolution. Concrete containing rebar or wire mesh also inhibits signal penetration.

The interpreted depths of objects detected using GPR are based on on-site calibration, handbook values, and/or estimated GPR signal propagation velocities from similar sites. GPR velocities and depth estimates may vary if the medium under investigation or soil water content is not uniform throughout the site.

Utilities are interpreted on the basis of reflections of similar size and depth that exhibit a linear trend; however, GPR cannot unambiguously determine that all such reflectors are related. Fiberglass USTs or utilities composed of plastic or clay may be difficult to detect if situated in soils with similar electromagnetic properties, or if situated in fill with other reflecting targets that generate “clutter” or signal scattering and thus obscure other deeper reflectors. Objects buried beneath reinforced concrete pads or slabs may also be difficult, but possible, to detect.

Changes in the speed at which the GPR antenna is moved along the surface causes slight variations in the horizontal scale of the recorded traverse. Distance interpolation may be performed to minimize the error in interpreted object positions. The variation in the horizontal scale of the GPR record may be controlled, to a certain extent, with a distance encoder or survey wheel. The GPR antenna produces a cone-shaped signal pattern that emanates approximately 45 degrees from horizontal front and back of the antenna. Therefore, buried objects may be detected before the antenna is located directly over them. GPR anomalies may appear larger than actual target dimensions.

GPR interpretation is more subjective than that for other geophysical methods. The interpretive method is based on the identification of reflection patterns that do not uniquely identify a subsurface target. Borings, test pits, site utility plans and other ground-truth are recommended to verify the GPR interpretations.

A.2 EM Time Domain Metal Detection

A.2.1 Description of the Method. The time domain electromagnetic system includes a single transmitter coil and two receiver coils. A primary magnetic field, generated by an alternating current supplied to the transmitter coil, induces eddy currents in nearby metallic objects. These induced eddy currents decay at a rate dependent on the characteristics of the anomaly, which in turn produces a secondary magnetic field with the same rate of decay. The decay over time of the secondary magnetic field generates a signal within each of the two receiving coils, thereby confirming the presence of metal.

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We collect EM time domain data using a Geonics EM61-MK2 high power system. The EM61-MK2 is a "coil over coil" system in which each coil measures 1x0.5 meters. Data can be collected in auto, wheel, or manual modes depending on the nature of the survey.

The Geonics EM61-MK2 data logging system consists of an Allegro field PC, EM61MK2 data-logging program, and a cable to connect the Allegro to the EM61 instrument. The EM61MK2 program acquires and records survey data from the EM61 under the control of the operator. For in-field quality control and initial anomaly identification, the Allegro field PC also provides a real-time visual display of the data in mV. Field information such as survey line number, starting station, increments, and comments are also recorded.

A.2.2 Data Analysis and Interpretation. Common applications of the time domain metal detector include the detection of environmental hazards such as drum and underground storage tanks (USTs), utilities and infrastructure, construction and industrial waste, and unexploded ordnance (UXO).

Depending on the nature of the target (size, depth, magnetic susceptibility), the signal it produces falls within an expected voltage reading. At sites free of metal objects and other cultural interference, USTs due to their size, shape, and composition tend to produce readings several thousands of mV higher than the non-ferrous background. This significant contrast with the background makes for rapid data analysis and detection of USTs and other large targets. However, if the target is small and/or has a weak signal response, such as that produced by many UXOs, significant time is required to process and analyze the data.

A.2.3 Limitations of the Method. EM voltage readings are influenced by proximity to surface metal objects such as fences, vehicles, reinforced concrete, or buildings that may produce spurious signals unrelated to the presence of buried metal targets.

Subsurface environments containing high concentrations of ferrous materials can decrease the contrast between the background signal and that produced by a UST, making their detection more complex. Also, larger buried pieces of metal, such as scrap metal or buried metal debris may produce signals similar to those of USTs and thus produce false positives.

Borings, test pits, site utility plans and other ground-truth are recommended to verify the interpreted EM results.

A.3 RTK GNSS Global Positioning System (GPS)

A.3.1 Description of the Method. The RTK GPS system consists of a base (reference) receiver and a roving receiver. The base receiver remains stationary during a survey and is mounted on a tribrach and tripod. A rover receiver is used to record points remotely and can be mounted on a staff, vehicle, or other object. The base provides real-time corrections to the rover over a radio connection. The system can produce accuracy on a centimeter scale, but the level of accuracy depends on factors that include the geometry of the transmitting satellites and the receivers' view of the horizons. (e.g., the density of buildings and trees). The data can be collected as quickly as 5 Hz or 5 readings per second.

A.3.2 Data Collection and Processing. We perform our GPS surveys using a Sokkia RTK GNSS GRX2. The base station can be set up over a known or unknown point, with the position taken from satellite information. Once the system has achieved a fixed solution for the rover receiver, data points can be collected with survey-grade (centimeter-scale) precision. When GPS points are being collected at a site where the fixed solution is constantly lost and gained, points are checked multiple times for precision. All data points are saved to a Carlson Surveyor 2 field computer.

The GPS data are corrected automatically by the base receiver in the field prior to being recorded. If the base station is located on an unknown point that is later defined, the GPS data can be corrected in the office to fit the real world coordinates.

A.3.3 Limitations of the Method. The quality of the GPS signal is site-specific. The base and rover receiver need to have clear views of the horizon and good satellite geometry to achieve the highest level of accuracy and precision. Although a fixed solution can be achieved in wooded environments or sites with taller buildings, it may take more time to achieve the solutions, the fixed solution may be lost frequently when moving the rover, and in some cases the fixed solution may be wrong. Each of these situations requires longer to locate data points accurately and precisely. When the point is too close to a building, beneath a building overhang, under a tree, or obscured by some other object, a fixed solution may not be possible.

When the base station is set up over an unknown point, the survey data location can be at least several tens of meters from the real world location. The data points will have survey grade precision relative to the location of the base station and other data points, but will have a real world accuracy discrepancy.

HGI does not guarantee to produce a surveyor-quality map from its GPS data, as this is not its profession. If survey-level accuracy is critical for a project, we recommend hiring professional surveyors for that purpose.

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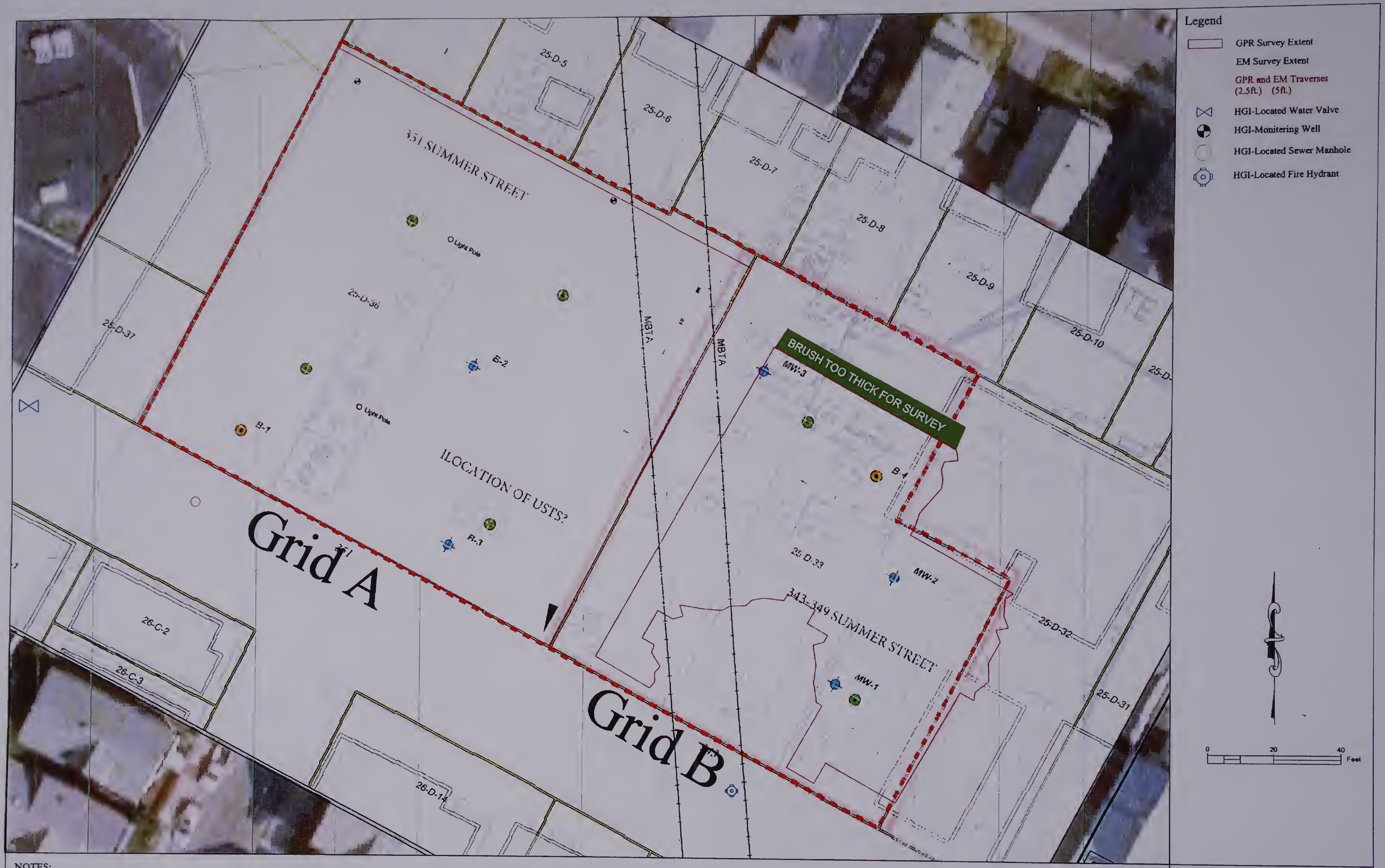


NOTES:

1.) The base map was created from HGI field notes, grid marks, GPS, an aerial photo of the site provided by Microsoft© Bing, and the PDF file "Maggiore Summer St_1934-1950 Sanborn Map (WITH LABELS)" provided by EnviroTrac.

2.) HGI's contributions to the base map are listed in the legend.

3.) Any utilities shown on the PDF drawing should be assumed present on the site.

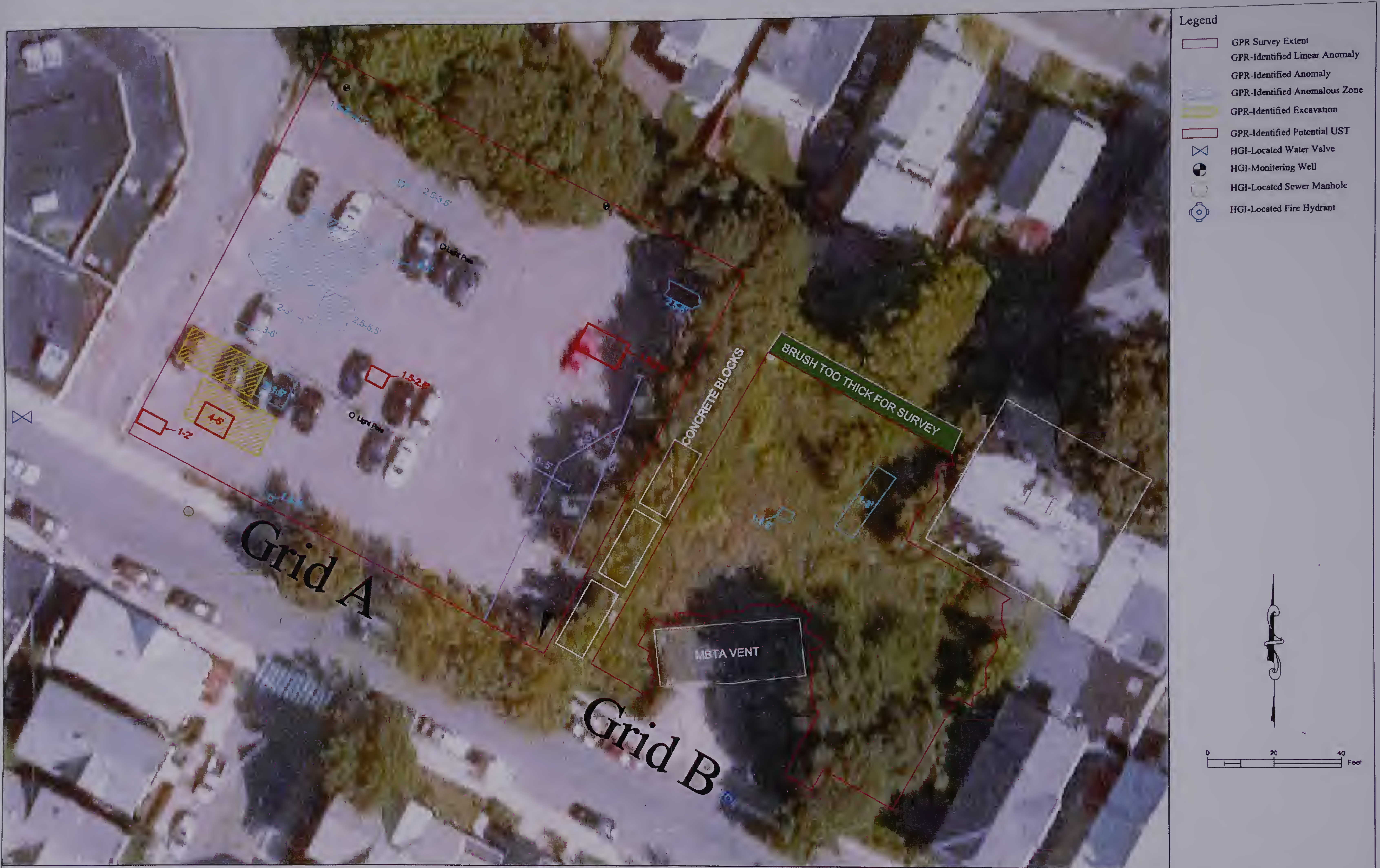
PLATE 1

May 2017 | File No. 2017024

Site Overview Map
Survey for USTs
343-349 & 351 Summer Street
Somerville, MA

Hager GeoScience, Inc.
596 Main Street, Woburn, MA 01801
(781) 935-8111 hgi@hagergeoscience.com

NOT ALL SUBSURFACE FEATURES MAY BE DEPICTED ON THIS MAP



NOTES:

1.) The base map was created from HGI field notes, grid marks, GPR interpretations, GPS, and an aerial photo of the site provided by Microsoft© Bing.
2.) HGI's contributions to the base map are listed in the legend.
3.) The locations of utilities and obstructions presented by HGI are a **"best fit"** to the base map and should be considered approximate. Reference to HGI-located features is recommended.
4.) Dashed GPR-identified utilities indicate lower confidence in the interpretation of the feature.
5.) Values listed with GPR-identified features are depths in feet; depths of features are based on GPR two way travel time velocity conversions and are approximate.
6.) The "GPR-Identified - Anomaly" and "GPR-Identified - Anomalous Zone" categories represent anomalies or anomalous areas with geometry and/or signal strength that stands out from the background GPR signal. The "GPR-Identified - Anomaly" category represents a single anomaly, while the "GPR-Identified - Anomalous Zone" category represents an area containing multiple individual anomalies or an area that stands out from the background GPR signal. These anomalies can have causes ranging from changes in the soil/fill to buried debris.
7.) GPR anomaly and anomalous zone shapes may vary from those depicted in the legend. The shape of each anomaly reflects the general outline that best fits that anomaly or anomalous area and may not actually reflect the shape of the potential subsurface obstruction.
8.) HGI recommends a minimum buffer of 2 to 3 feet on either side of utility centerlines and around anomaly extents as indicated on the map due to utility dimensions and inaccuracies from grid creation, data collection, and survey locating. We recommend a larger buffer for electric lines, and further that they be turned off prior to excavating. In addition, it should be assumed that utilities that appear to terminate may actually continue, but could not be traced farther with GPR and/or PUL. Drilling and/or excavating should proceed with caution.

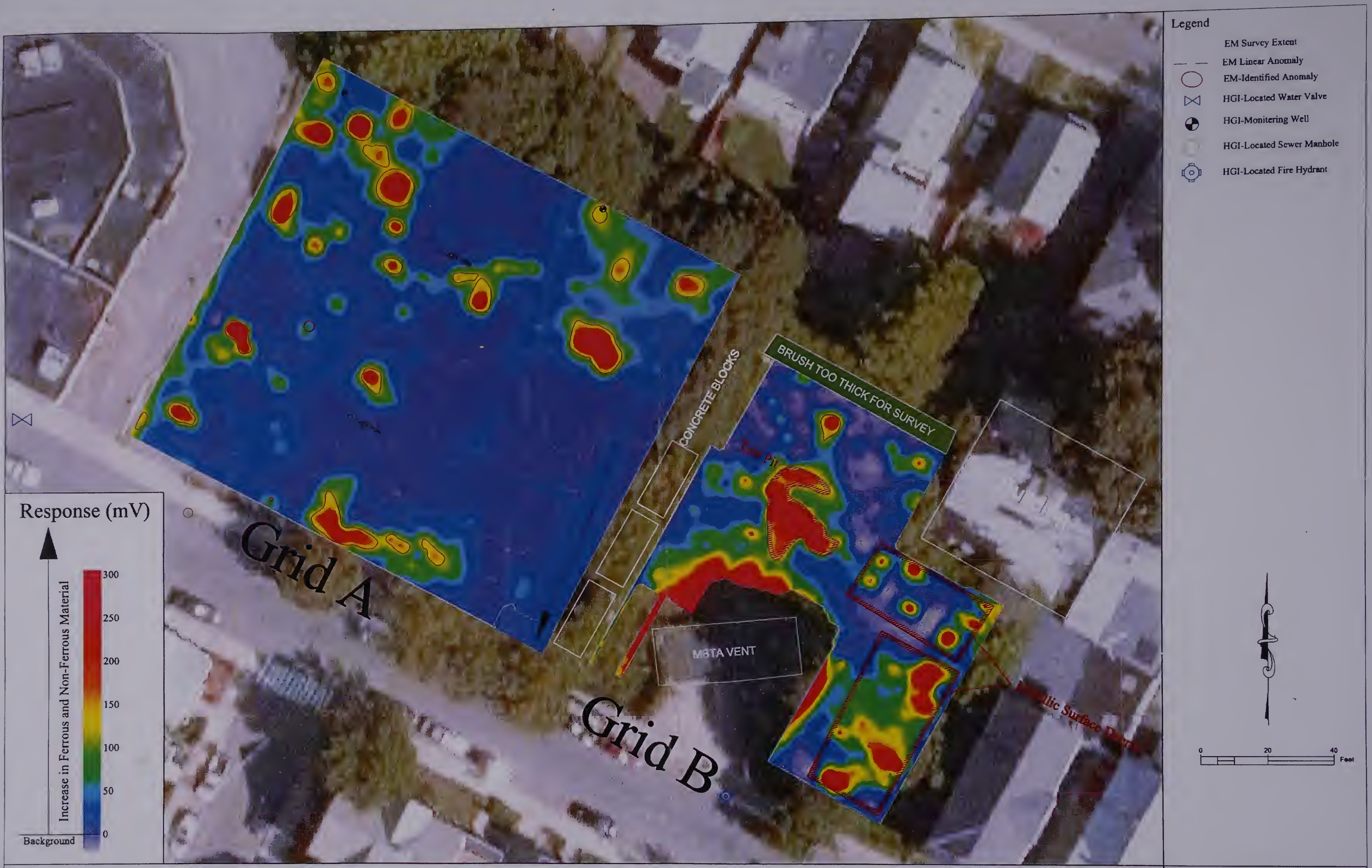
PLATE 2

May 2017	File No. 2017024

GPR Interpretation
Survey for USTs
343-349 & 351 Summer Street
Somerville, MA

Hager GeoScience, Inc.
596 Main Street, Woburn, MA 01801
(781) 935-8111 hgi@hagergeoscience.com

NOT ALL SUBSURFACE FEATURES
MAY BE DEPICTED ON THIS MAP



NOTES:
1.) The base map was created from HGI field notes, grid marks, EM interpretations, GPS, and an aerial photo of the site provided by Microsoft© Bing.
2.) HGI's contributions to the base map are listed in the legend.
3.) The locations of utilities and obstructions presented by HGI are a **"best fit"** to the base map and should be considered approximate. Reference to HGI-located features is recommended.

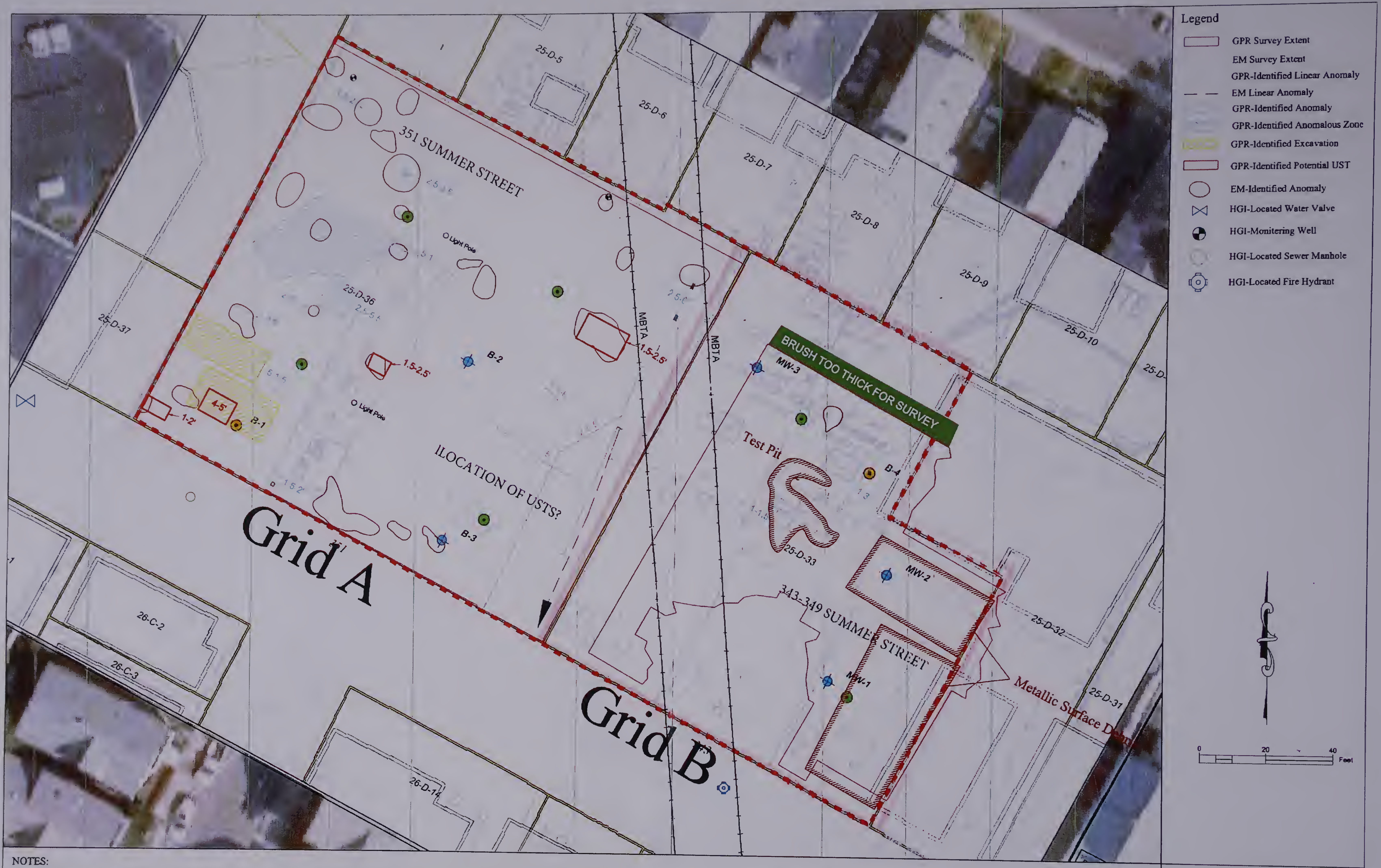
PLATE 3

May 2017 | File No. 2017024

EM Contour Map
Survey for USTs
343-349 & 351 Summer Street
Somerville, MA

Hager GeoScience, Inc.
596 Main Street, Woburn, MA 01801
(781) 935-8111 hgi@hagergeoscience.com

NOT ALL SUBSURFACE FEATURES
MAY BE DEPICTED ON THIS MAP



NOTES:

1.) The base map was created from HGI field notes, grid marks, EM and GPR interpretations, GPS, an aerial photo of the site provided by Microsoft© Bing, and the PDF file "Maggiore Summer St_1934-1950 Sanborn Map (WITH LABELS)" provided by EnviroTrac.

2.) HGI's contributions to the base map are listed in the legend.

3.) The locations of utilities and obstructions presented by HGI are a **"best fit"** to the base map and should be considered approximate. Reference to HGI-located features is recommended.

4.) Dashed GPR-identified utilities indicate lower confidence in the interpretation of the feature.

5.) Values listed with GPR-identified features are depths in feet; depths of features are based on GPR two way travel time velocity conversions and are approximate.

6.) An anomaly identified with both GPR and EM may be shown at slightly different positions by each method due to the different nature of the two sensing technologies.

7.) The "GPR-Identified - Anomaly" and "GPR-Identified - Anomalous Zone" categories represent anomalies or anomalous areas with geometry and/or signal strength that stands out from the background GPR signal. The "GPR-Identified - Anomaly" category represents a single anomaly, while the "GPR-Identified - Anomalous Zone" category represents an area containing multiple individual anomalies or an area that stands out from the background GPR signal. These anomalies can have causes ranging from changes in the soil/fill to buried debris.

8.) GPR anomaly and anomalous zone shapes may vary from those depicted in the legend. The shape of each anomaly reflects the general outline that best fits that anomaly or anomalous area and may not actually reflect the shape of the potential subsurface obstruction.

9.) HGI recommends a minimum buffer of 2 to 3 feet on either side of utility centerlines and around anomaly extents as indicated on the map due to utility dimensions and inaccuracies from grid creation, data collection, and survey locating. We recommend a larger buffer for electric lines, and further that they be turned off prior to excavating. In addition, it should be assumed that utilities that appear to terminate may actually continue, but could not be traced farther with GPR and/or PUL. Drilling and/or excavating should proceed with caution.

PLATE 4

May 2017 File No. 2017024

EM and GPR Interpretation
Survey for USTs
343-349 & 351 Summer Street
Somerville, MA

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NOT ALL SUBSURFACE FEATURES
MAY BE DEPICTED ON THIS MAP

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